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THE OIL WEEKLY

OIL & GAS ENGINEERING

News Statistics

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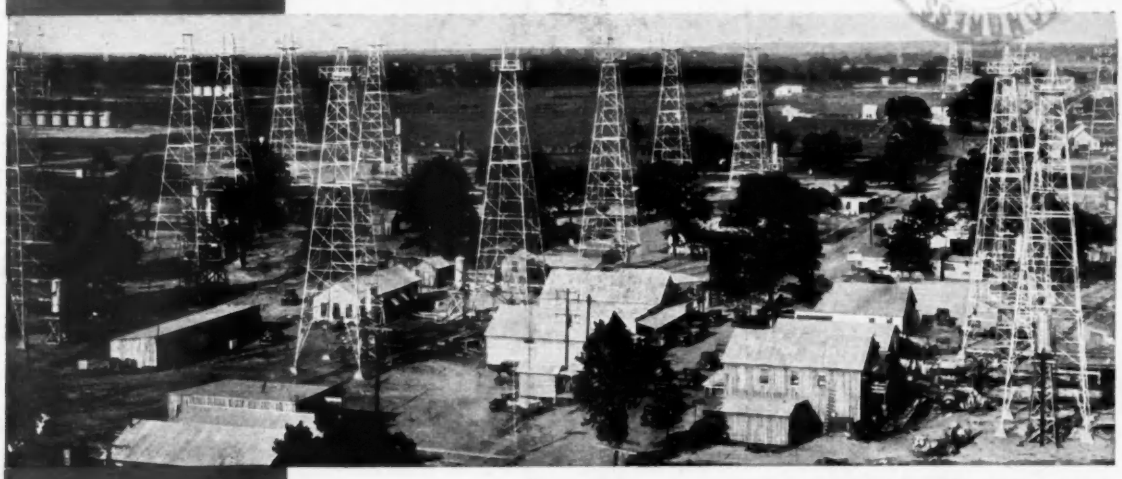
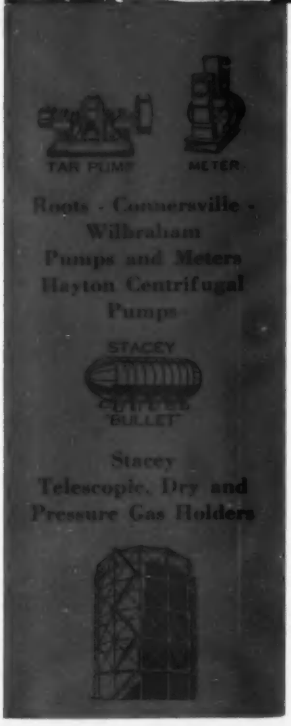


IDECO DERRICKS, VAN FIELD, TEXAS



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August 7, 1931

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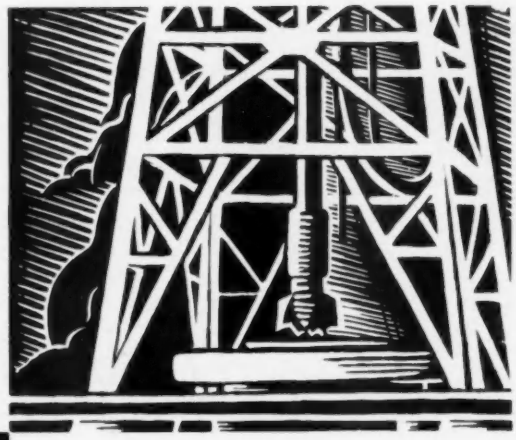

for all formations

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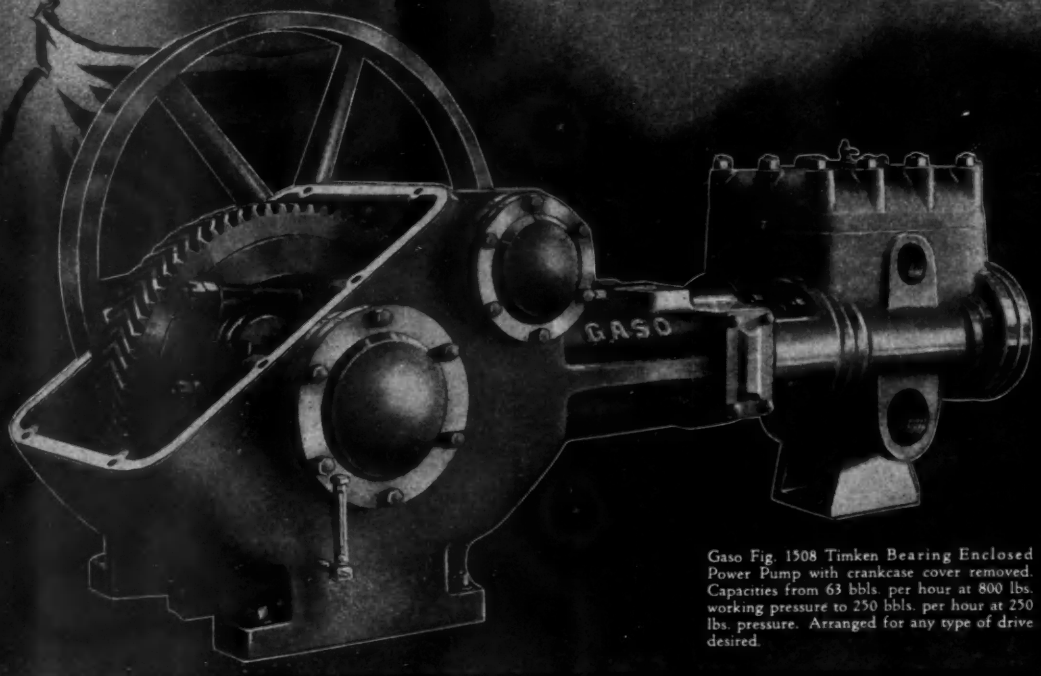

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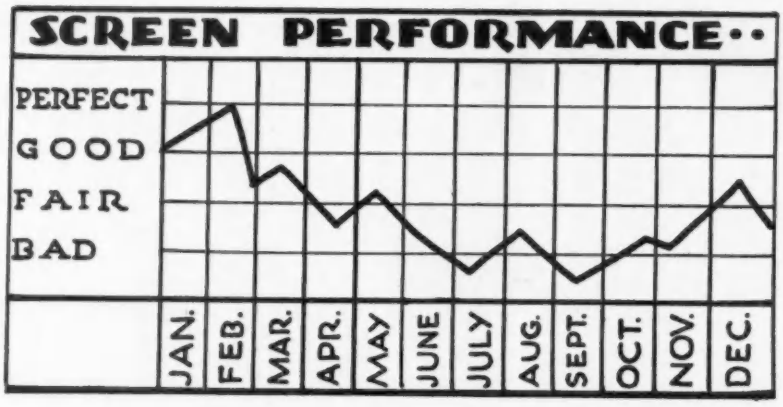

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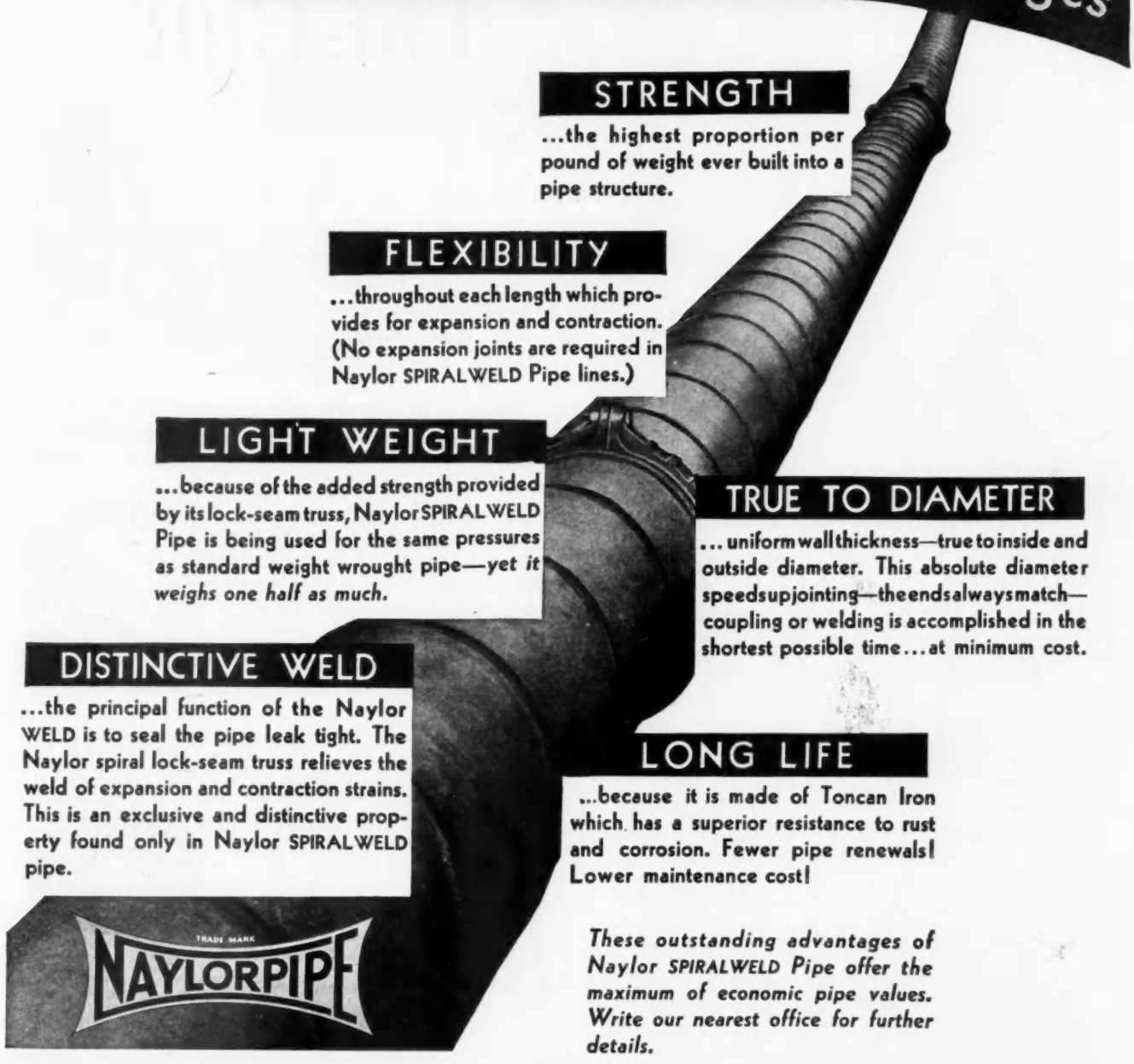

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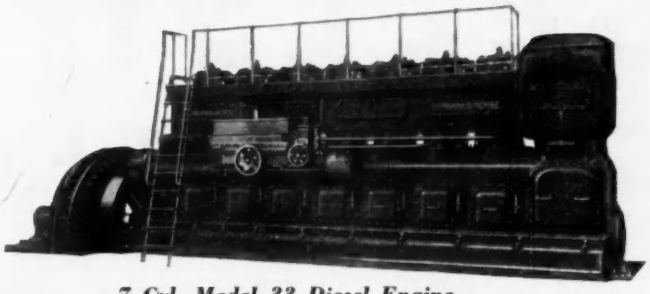
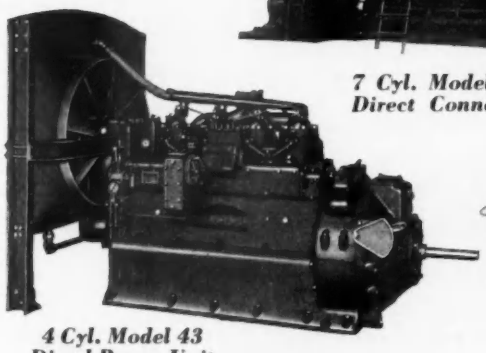
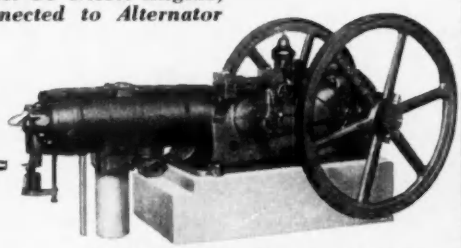


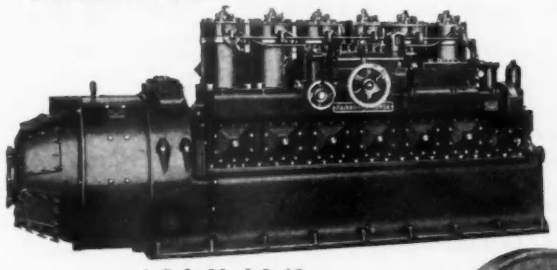
7 Cyl. Model 33 Diesel Engine, Direct Connected to Alternator



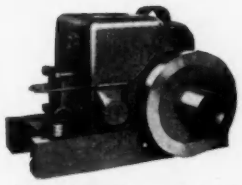
4 Cyl. Model 43 Diesel Power Unit



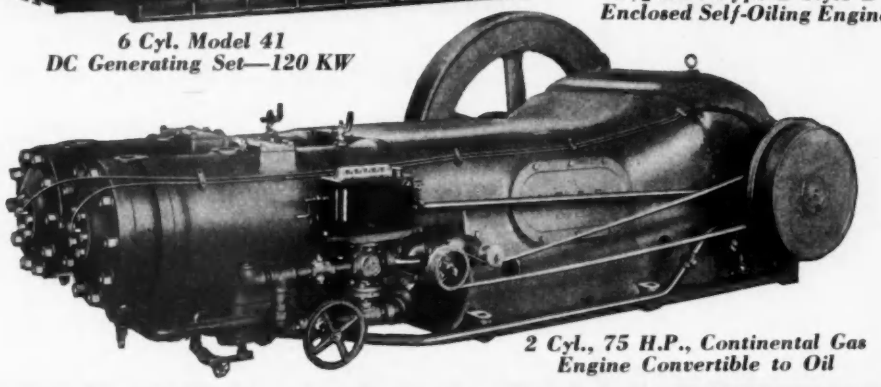
Continental Gas Engine, 40 H.P., Converted to Oil Engine



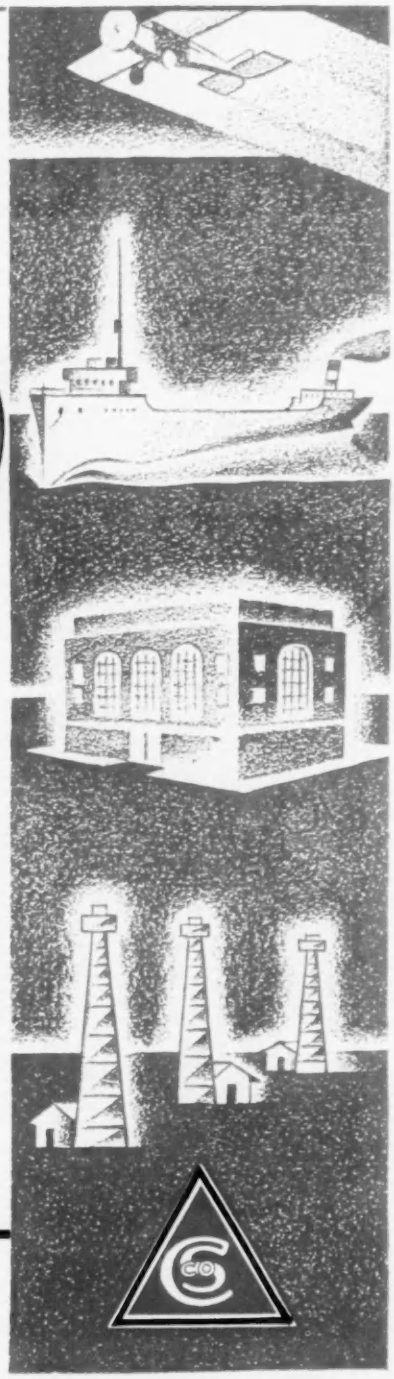
6 Cyl. Model 41 DC Generating Set—120 KW



1½ H.P. Type Z Style D Enclosed Self-Oiling Engine



2 Cyl., 75 H.P., Continental Gas Engine Convertible to Oil



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The American Flow Packer is the result of many years careful study and operation in all kinds of holes in the Mid-Continent Area. It may be pulled or run in any depth hole without a strain on the tubing.

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AUG 10 1931

THE OIL WEEKLY

August 7, 1931
Vol. 62, No. 8

S. W. ROBINSON
Editor

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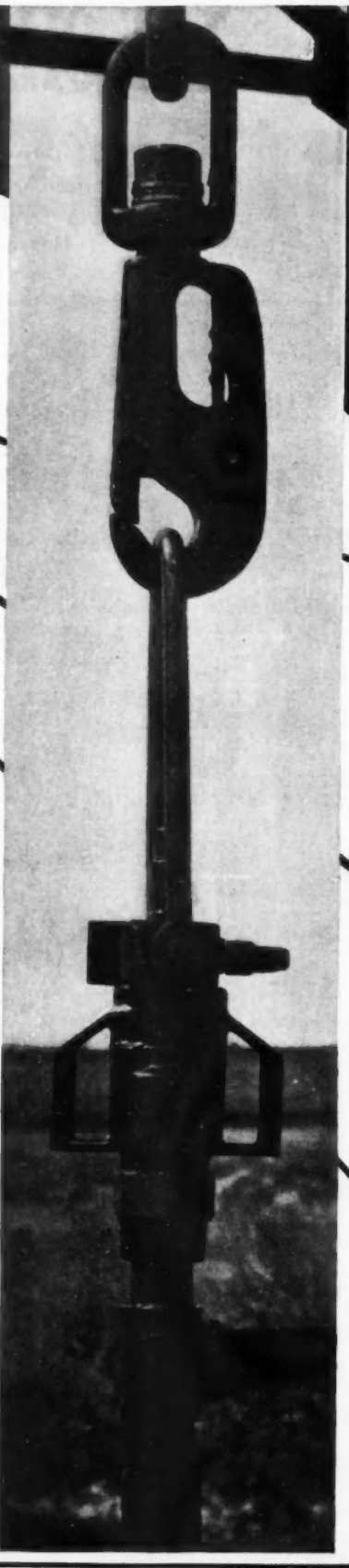
SAVE 3 WAYS



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THE OIL WEEKLY

VOLUME 62, NO. 8 AUGUST 7, 1931

THE WEEK'S NEWS

Sterling Asks Tax of Two Cents a Barrel on Crude

Austin, Texas.—In his message to the legislature Monday morning, August 3, Governor Sterling requested that a tax of two cents per barrel be placed on crude oil in place of the present two per cent production tax in force. He believes that this will bring as much revenue to the state as it would if the oil were worth $1.00 per barrel and the present tax in force.

A bill to this effect was promptly introduced by Representative Lee Satterwhite, and a hearing was held that night.

Considerable opposition developed against the Satterwhite bill taxing oil producers two cents per barrel, in place of the former tax of two per cent of the value of the production. Jake Wolters, Jake Hamon and T. F. Hunter, appeared before the House committee on revenue and taxation, declaring that the tax is confiscatory and will run the independents out of the oil business. In East Texas, where oil in some cases is selling for 10 cents a barrel and less, the tax would amount to 20 per cent of the value of the product and would be a serious handicap to production in that area.

The Senate committee on state affairs reported favorably on the Woodward bill which creates a new commission to handle conservation, and prevents physical waste without permitting proration to market demand. This was a complete victory for the Governor, as the bill closely follows every principle he advocated.

Governor Sterling's message fell like a bombshell among the advocates of proration to market demand, as he reiterated his former stand on this question, insisting that he wants no law that will lead to price-fixing and monopoly. He also repeated his request for an appointive commission to handle conservation. He urged that a law be passed to speed up court procedure in conservation cases, and that the legislature do all within its power to aid in the enforcement of the anti-trust laws.

The Senate committee on state affairs heard various speakers during the day. The discussion centered, as it did in the House, around the question of whether or not market demand should be written into the bill, or specifically prohibited.

T. F. Hunter of Wichita Falls, and Jacob Wolters of Houston appeared before the committee advocating proration to save the marginal wells and to keep the independent in the oil business. General Wolters told the committee that The Texas Company was anxious to see the independent in the oil business, to prevent the entire industry from falling into the hands of the major companies, and thus precipitating a final fight for the control of the oil business.

Judge C. L. Black, Elwood Fouts of Harrison Oil Company, and Jno. E. Green, Jr., counsel for the Gulf companies, protested the passage of a bill to prorate production to market demand, or otherwise try to assist the oil industry by legislation to upset the law of supply and demand. Mr. Green told the committee that the oil from strippers would not be lost if the wells were shut down for some time. He pointed out that Underwood Nazro, vice president of Gulf Production Company, had made his fortune bringing oil out of abandoned stripper wells in the Spindletop field.

Repeated efforts were made during the day to amend the Wagstaff bill in the House to permit the proration of production to market demand. After the governor's message was read, there was a decided movement against such legislation, and several objections were made to an effort to force "market demand" upon the Governor.

Texas Solons Puzzled by Economics of Oil Industry

Austin, Texas.—Having closed its investigation of the oil industry, the Texas legislature has plunged into a discussion of the various bills which have been offered as a solution of the problems in Texas. There is, apparently, a universal desire on the part of the solons to pass a conservation measure, and to speed up court action to prevent the damage which has followed delays in trials in the past. On this latter question, both bodies are agreed, and it is generally expected that there will be little difficulty in passage of a measure of this nature that will go into effect at once.

Two problems, however, confront the body. The first is whether or not the new laws will be administered by the railroad commission or by a new commission to be created to handle conservation exclusively; the second, and by far the most difficult, is to find some method of preventing physical waste which will not result in controlling economic waste and thus bring about price-fixing by law.

(*Continued on page* 43)

Oklahoma Deep Test Reveals Valuable Geologic Data

By FLOYD SWINDELL
Staff Representative

A NEW drilling depth record was established for the Mid-Continent area during the week ending July 18, when Mid-Kansas Oil and Gas Company and Ramsey Petroleum Corporation reached a depth of 8662 feet in their Preston-Culp 6, NW NW NE Section 6-5n-9w, in the western portion of the Cement pool in Caddo County, Oklahoma. Until that time the record had been held by Sinclair Oil and Gas Company with its Howell 1, SWc SW Section 14-26n-24w, Harper County wildcat, which was drilled to 8590 feet and plugged back around 5300 feet, where it is now producing approximately 15,000,000 cubic feet of gas and some low grade gasoline.

The Mid-Kansas and Ramsey test is perhaps the most interesting of the eight Oklahoma tests that have been drilled below 7000 feet. Geologic knowledge of this part of the state is limited almost entirely to that which can be gained by study of the surface beds. The Wichita Mountains, which strike approximately N. 70° W. through northern Comanche County and southeastern Kiowa County, and the Anadarko Basin, having about the same strike and covering almost one-third of the state, are the two major structural features.

Production in the Cement pool is accumulated in the Cement Anticline which is located about 22 miles northeast of and roughly parallels the Wichita Mountains. Based on R. L. Clifton's interpretation of the Anadarko Basin, (as presented on page 76 of Oklahoma Geological Survey, Bulletin 48) the Cement Anticline lies near the axis or

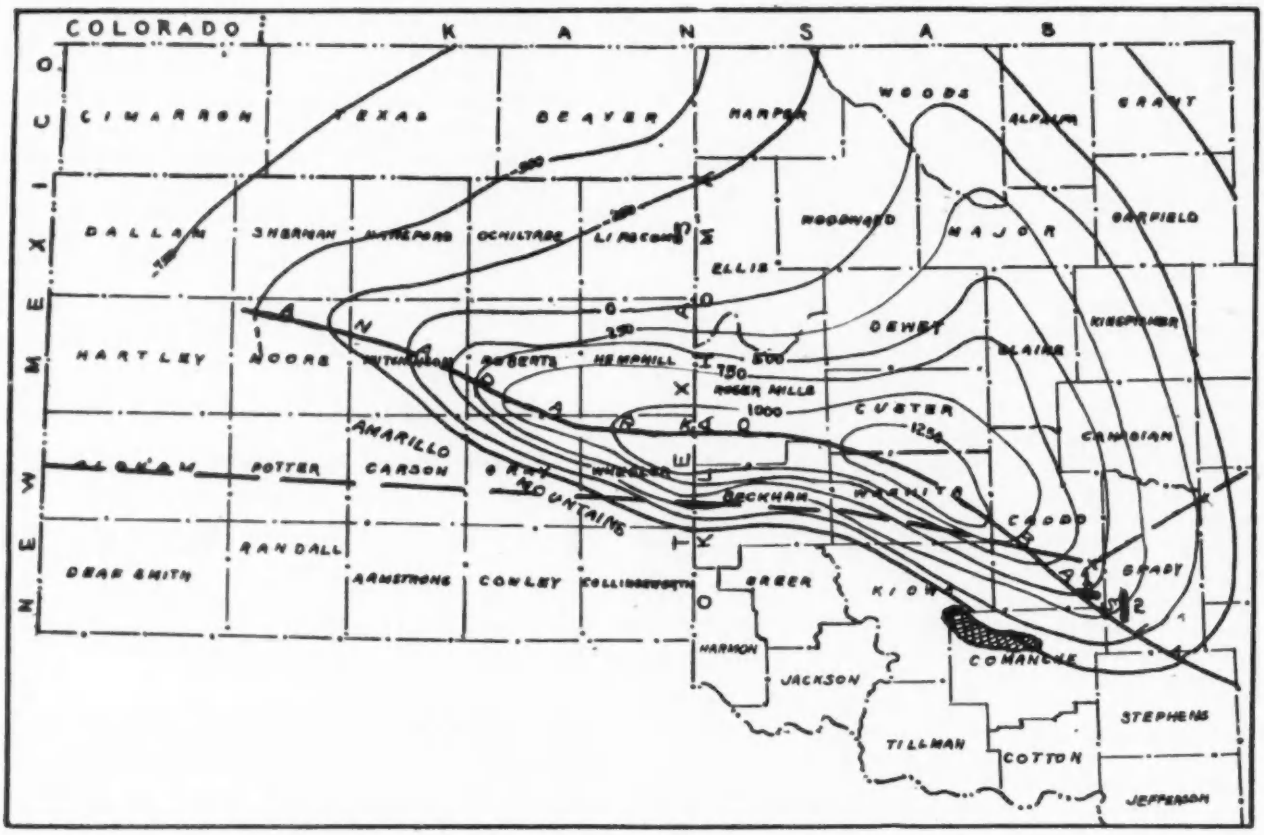


FIGURE 1

Based on Figure 12, Oklahoma Survey Bulletin 48, Pp. 76 eastern and western terminations of the Anadarko Basin are tentative. Cross-patched area indicates location of Pre-Cambrian outcrops in the Wichita Mountains. The Cement pool in southeastern Caddo County and the Chicakasha gas field in southwestern Grady County are shown in solid black. Heavy broken line indicates the approximate location of cross-section presented in Figure 2

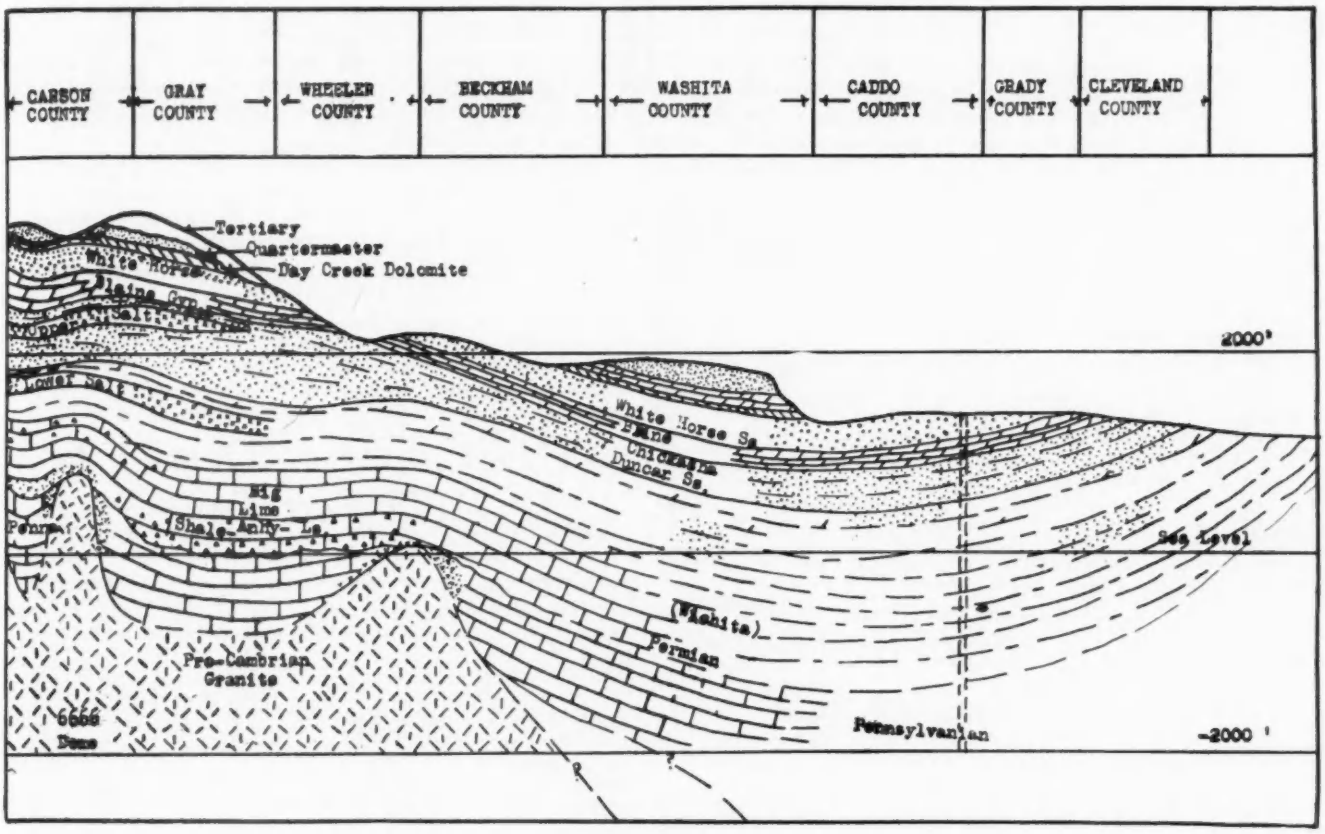


FIGURE 2

Based on cross-section presented in Oklahoma Geological Survey Bulletin 48 after C. Don Hughes. The section passes about two townships north of the well but is believed to be representative of the general geologic condition existing around the Cement anticline. Vertical broken lines show the approximate point at which the test should intersect the section. Two interpretations in regard to the Pre-Cambrian surface from Washita County eastward are made by the writer. Data revealed by the test indicate that the granite surface may drop abruptly to the east from Wheeler County, Texas

bottom of that great structural basin. It is composed of two domes, the Cement Dome, which centers about one mile east of the town of Cement and the Keeche dome which centers in Section 36-6n-10w. The test is located on the Keeche Dome, which has a closure of about 140 feet[1] and dips ranging from 360 to 420 feet per mile as measured on the surface beds. Total closure on this part of the Cement anticline is about 200 feet.

Structurally the area is interesting but little understood because of meager subsurface information. The Cement Anticline strikes about N. 70° W. while the Chickasha gas structure, only eight miles away in Grady County, strikes less than 10 degrees west of north. Geologists have long been puzzled as to the type and intensity of folding that might be encountered in other parts of the basin and in the lower beds. No definite data have been obtained to date on this question but it is generally believed that a major unconformity will be encountered at the base of the Pennsylvanian series.

Well Ideally Situated

Being located on a dome which has abnormal surface dips and in an area which shows evidence of intense folding in the upper beds, this well seems to be ideally situated for testing conditions in the lower beds with in the basin. When and if the Pennsylvanian formations have been passed through, the test will be a potential threat at any depth provided the anticipated structural condition is found to exist. Assuming that the Pre-Pennsylvanian formations were sharply folded, truncated by erosion, and later covered by younger sediments, as was the case in Oklahoma City, the drill may go from Pennsylvanian rocks into beds of any age from Mississippian down to Pre-Cambrian. However, it should be remembered that outcrops of Pre-Cambrian granites and porphyries are located in the Wichita Mountains only 22 miles away. Figure 1 shows the location of the Cement and Chickasha structures with relation to the Anadarko Basin and the Wichita Mountains and Figure 2 shows the general surface condition as interpreted by a study of surface beds and a small amount of subsurface data.

The test was spudded with rotary tools during the week ending January 7, 1931, and has been drilling continuously since that date with the exception of a few days which have been required for repair work on the equipment. Little difficulty has been experienced with the equipment and the well is now being drilled below 8760 feet with rotary tools. This requires the use of about 100 stands of rotary drill pipe which offers no small problem when running in and out of the hole.

Geologic Data

"Thickness of the Permian in the Cement pool has been estimated by different geologists at 800 to 2700 feet. Drill samples were collected from a number of wells and examined for fossils by P. V. Roundy, but only a few Fora-

minifera and sponge spicules were noted, and these were types that have so wide a geologic range that they were of no use in determining the age of the strata. An attempt was made to trace the formations eastward to the outcrop of the Pennsylvanian formation in northern Garvin County by the use of well logs. However, few wells have been drilled in the intervening area, and the correlation is only tentative. The conclusion based on this correlation is that the top of the Pennsylvanian is at a depth of about 1500 feet, at the base of the red shale group."[2] A partial log of the Preston-Culp- 6 follows:

3375 to 3407 feet—show oil.
4655 feet—sand.
4725 to 4766 feet—broken sandy shale, dry.
4805 to 4835 feet—broken sand, dry.
4870 to 4900 feet—sand, dry.
5192 feet—shale.
5440 feet—shale.
Iine-inch casing stuck at 4000 feet when total depth was 5547 feet.
Nine-inch casing cemented at 5513 feet.
5564 feet—blue shale.
5898 to 5904 feet— cored dry.
6047 to 6077 feet—sandy lime showing oil and gas.
6077 to 6097 feet—cored dry.
6205 to 6215 feet—cored dry sand and shale.
6492 feet—shale.
6767 to 6779 feet—cored sand showing gas.
6840 to 6848 feet—cored sandy lime and shale, dry.
7110 to 7115 feet—cored sand and shale, dry.
7302 to 7307 feet—cored sand, shale and lime, dry.
7307 to 7312 feet—cored sand, shale and lime, dry.
7312 to 7321 feet—cored sand, shale and lime, dry.
7321 to 7330 feet—cored sandy shale showing oil.
7431 feet—sandy shale.
7646 feet—shale.
7738 to 7745 feet—sand showing oil.
7885 feet—shale.
8240 feet—sandy shale.
8360 feet—hard sand.
8395 to 8419 feet—cored all sand but last foot, which was shale, good show of oil and gas.
8725 feet—drilling in sandy shale—July 22, 1931.

Pennsylvanian Thickness Surprise

Before the test was commenced no one familiar with the area estimated as great a thickness of Pennsylvanian as has been encountered. Assuming the tentative correlation of 1500 feet as the Permian-Pennsylvanian contact, the drill has been in that series of formations during the last 7225 feet of hole.

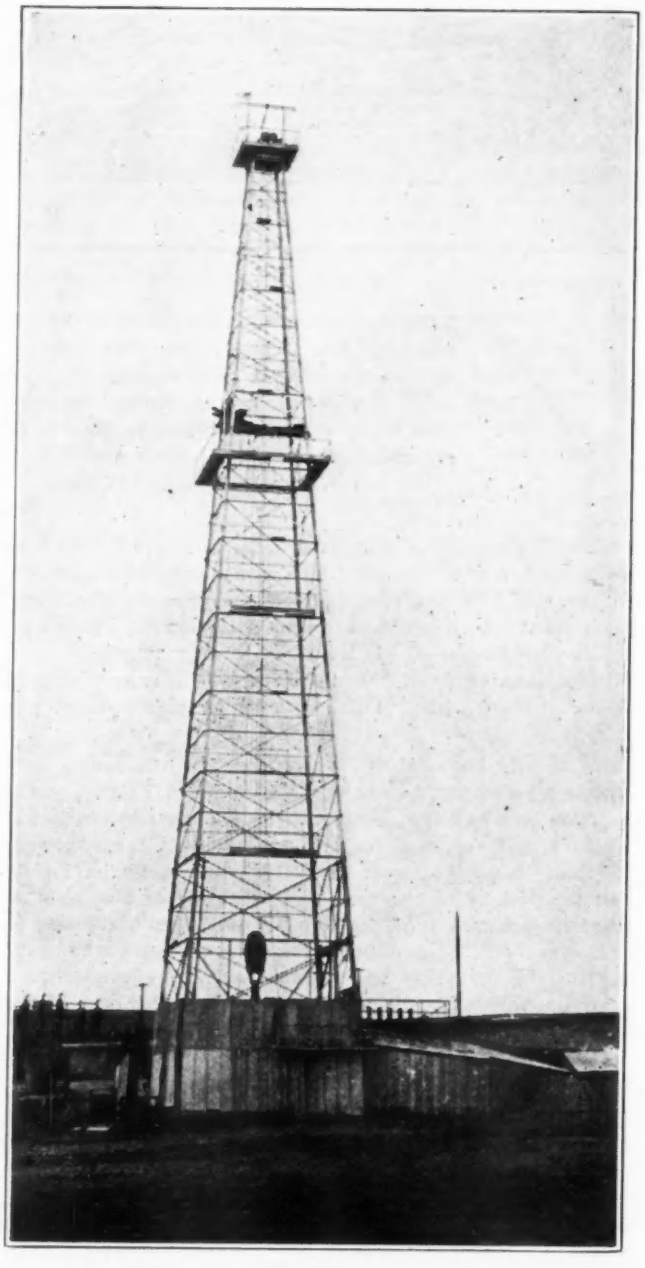
There is considerable difference of opinion as to what Pennsylvanian section should be expected in this area. Some geologists believe that the Central Oklahoma or Oklahoma City type section is present while others hold that the typical Southern Oklahoma section is being encountered.

Hard sands and shales encountered around 8300 feet are being correlated by one geological department as Middle Deese, which is in the lower part of the Southern Oklahoma Pennsylvanian section. Productive oil sands in the Graham, Fox, and Sholom Alechem oil fields of Carter County have been correlated, in part at least, with the Dornick Hills formation[3], which underlies the Deese and it is possible that the oil and gas show encountered at 8395 to 8419 feet is in formation equivalent to the Dornick Hills which is believed to be at least partially equivalent to the Bend group of Texas.[4]

Remaining thickness of Pennsylvanian is problematical and can be answered only by the drill. Operators of the test have not indicated how much deeper they expect to drill, but it can be safely said that the test has already revealed a large fund of geologic information and it goes down on the list as the most interesting test drilled in several years in the Mid-Continent regardless of the additional depth that is penetrated.

[1]Reeves, Frank, "Cement Oil Field, Caddo County, Oklahoma," U. S. G. S. Bulletin 726-B, pp 64.
[2]Ibid, pp. 57.
[3]Tomlinson, C. W., "Geology of Carter County," Oklahoma Geological Survey Bulletin 40, Vol. II, pp. 246.
[4]Ibid., pp. 246.

This California Derrick Is 175 Feet Tall



Superior Oil Company's Huffman 3 at Kettleman Hills

East Texas Salt Domes and Structures Promise Oil

By JACK LOGAN
Staff Representative

THE widespread interest in all of Northeast Texas following discovery of the large field of Rusk, Gregg, Smith and Upshur Counties has resulted in considerable speculation as to whether or not the interior salt domes and structures lying in this part of the state will ever become important sources of petroleum.

Whatever the results may be, those domes and structures will likely be prospected further in the future with an interest whetted by the realization that they offer possibilities for production from the Woodbine sand, the prolific formation first thrust into prominence by yielding great quantities of oil at Mexia and other fields of that fault zone district, and today made nationally if not internationally famous by virtue of being the producing horizon of the great East Texas field.

For these domes are located in the middle of the East Texas Basin (or Embayment), a former extension of the Gulf of Mexico, extending between the Sabine Uplift on the east and the region of the Mexia-Powell fault zone on the west. (The salt domes and structures as well as the East Texas Basin and the Sabine Uplift are shown on an accompanying map in this issue). When the sea advanced northward and spread east and west in Woodbine time, laying down the Woodbine sand, this formation was deposited along the region at present occupied by the domes. Consequently there are great thicknesses of the Woodbine sand, several hundred feet, in the interior salt dome region. Presence of this sand, known to carry oil in great quantities in the above mentioned fields, fulfills at least one important requisite for petroleum accumulation. Another prime requisite, structural relief permitting trapping of the oil, is fulfilled by the salt domes, which have been thrust upward through the Woodbine and overlying formations and virtually to the surface in some instances. Although they forced their way through these strata, the domes usually left the formations tilted upward around them. So tilted adjacent to the domes, the affected formations if porous enough offer the possibility for oil accumulation. On some of the deeper domes, furthermore, sands have been elevated above the domes without being pierced, and in those instances a more or less ideal structural condition exists.

Aside from the vertical uplift of formations there has also been faulting of importance around the interior domes in East Texas—considerably more than there exists in connection with the prolific oil producing salt domes farther south, along the coastal plains. For the coastal domes at depths which can be reached in drilling have pierced or lifted up rather plastic formations—sands, shales and gumbos of Eocene, Oligocene or more recent age; whereas the interior domes are far enough inland that they are not covered by those younger and plastic sediments, and the formations of the Upper Cretaceous and of the Lower Cretaceous are within depths reached in drilling. Since these latter formations include large thicknesses of chalks and limestones, hard and brittle substances, they offered considerable resistance to the uplifting of the salt domes; and where the domes pushed their way through the chalks and limes they sometimes broke, fractured and displaced the latter to considerable extent. That faulting makes the structural conditions around the interior domes somewhat complex in some instances, and it affords additional structure for possible oil accumulation. At Boggy Creek dome, Anderson-Cherokee Counties, in fact, there is oil production from the Woodbine sand, and it is associated to some extent with faulting adjacent to the dome, the production extending in a remarkably straight northeast-southwest line, with the wells confined within a very narrow zone along the south and east flanks of the salt mass.

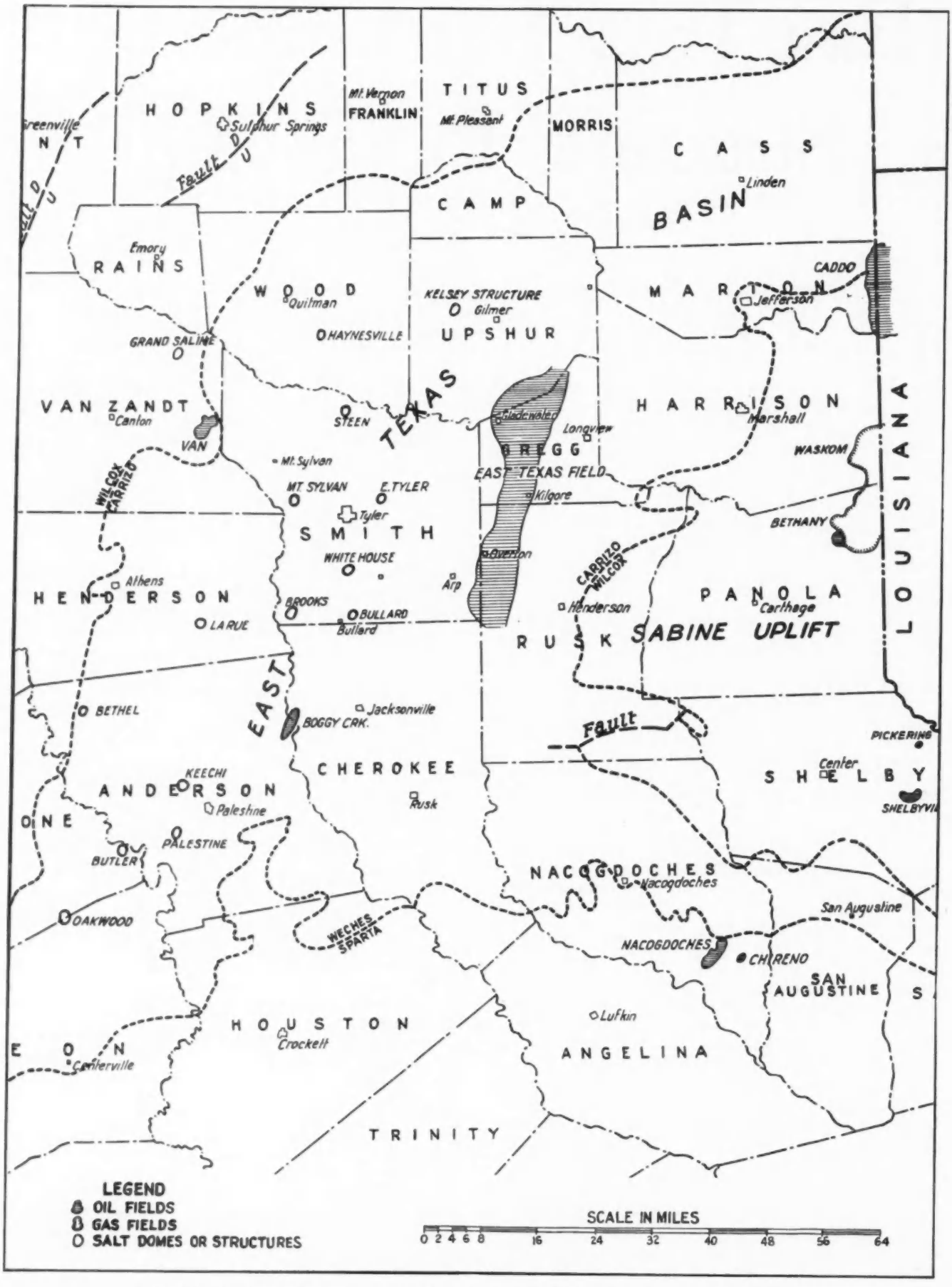
Within depths reached in drilling, the domes of East Texas range in diameter from three-fourths mile for Palestine to 1½ miles for Brooks. The average for all the domes being probably slightly over a mile. The diameters of the areas uplifted by the domes vary from three to 4½ miles. In being thrust upward the domes have penetrated formations, but they have also lifted up bodies of some of the normally deep formations, in one instance at least (Palestine), the Buda formation of Lower Cretaceous age cropping out at the surface, having been lifted about 5500 feet.

Possible Productive Formations

While the Woodbine sand is mentioned above as a possible source of production on or around the interior salt domes, there are also other formations, both above and below the Wodbine, which carry oil or gas in minor or important quantities in certain localities in eastern Texas, and the petroleum possibilities of the domes extend also to those formations.

Practically all domes of East Texas (as well as of North Louisiana on the opposite side of the Sabine Uplift) are located within country covered at the surface by lower Claiborne sediments, which are of Eocene age. Some of the East Texas domes have been pushed up through all underlying formations until their tops are virtually at the surface, as at Palestine dome, where salt is within 125 feet of the sourface, and at Steen, where cap rock has been found at depth of 75 feet. (In Louisiana Winnfield and Rayburn interior domes have cap rock at the surface.) In contrast with the shallow domes, there are some in East Texas which are 2000 or more feet below the surface, an example among the older known domes being Keechi, with highest known salt around 2150 feet, while there are others

Oil and Gas Fields, Salt Domes, and Structures in Northeastern Texas



(Dashed lines showing contacts of surface formations serve to indicate outline of western portion of Sabine Uplift and boundaries of the syncline or geosyncline popularly known as the East Texas Basin, lying to the west of the uplift.)

deeper than the latter depth among the more recently discovered domes, found with aid of geophysical methods, some of these discoveries in fact being at such depth that they have not been definitely proved as salt domes, and being more accurately classed at least temporarily as domelike structures.

The following table lists formations from the surface downward as found in the East Texas basin, the thicknesses listed being the approximate normal thicknesses of the formations in central Smith County, around the middle of the basin or geosyncline.

Formation and age—	Approximate Thickness
Tertiary Eocene Lower Claiborne.	500
Wilcox	900
Midway	500
Cretaceous Upper	
Cretaceous Navarro.....	1,300
Pecan Gap chalk..	400
Taylor	900
Austin chalk	300
Eagle Ford	400
Woodbine	300
Lower Cretaceous.	?

Some Offer Possibilities

As stated previously several of the above listed formations offer petroleum possibilities. It is the lower Claiborne (Queen City sand) which yields the heavy oil in the small shallow wells of Nacogdoches County, and that same sand has given showings of oil in several wildcats in the East Texas Basin. Around some of the interior salt domes the top of the Queen City is at the surface. Oil and gas showings have been found in the Wilcox formation in Anderson County, and eastern Cherokee County has furnished a gas showing from sand in lower portion of the Navarro formation (Magnolia Petroleum Company's Summers 1, near Ponta). At depths of 100 feet or less below the Pecan Gap chalk, and thus in the Taylor formation, is a sand in East Texas 50 to 100 feet thick which has given showings of oil or gas in several wells, and it is regarded as a promising formation for commercial production under favorable structural conditions. In the base of the Taylor, just above the Austin chalk, there is also another possible producing sand. Farther down the next potential oil source is the Eagle Ford formation, which in some localities contains important sand horizons, as for instance at Keechi dome. This formation might logically produce oil under proper structural conditions. Below the Eagle Ford is the previously mentioned Woodbine sand, lowermost formation of the Upper Cretaceous. The Woodbine sand is the source of

Data on Interior Salt Domes and Related Structures in East Texas

PROVEN SALT DOMES

County and Dome, Date Discovered, Discoverer and Method	Shallowest salt, feet	Shallowest cap rock, feet	Remarks
ANDERSON COUNTY—			
Bethel .....1927 Pure Oil Company Seismograph	1600	1440	Pure's Cook 1 in 1927 hit salt 1600 ft; believed to be near top of dome.
Keechi .....1891 E. T. Dumble Geology	2150	No cap	Rediscovered 1915 by W. I. Simms and L. C. Chapman.
Palestine ..... Old dome	122	120	Salt evaporated during Civil War and mined beginning 1904.
ANDERSON-CHEROKEE COUNTIES—			
Boggy Creek.....1924 M. A. Davey Geology	2612	2500	Only oil-producing interior salt dome of East Texas; oil from Woodbine sand at 3500 to 4000 feet.
FREESTONE COUNTY—			
Butler ..... Old dome	312	....	Named by O. B. Hopkins; salt has been evaporated from water wells here.
FREESTONE-LEON COUNTIES			
Oakwood .....1927 Roxana (Shell Pet. Corp.) Seismograph	....	703	Roxana's Marshall 1, believed near top of structure, proved dome January, 1928, drilling cap rock.
SMITH COUNTY—			
Brooks ..... Old dome	220	195	Salt evaporated during Civil War.
Bullard .....1927 Gulf Prod. Co. Seismograph	531	527	Gulf's A. Morgan 1 proved dome November, 1927, drilling into salt.
East Tyler .....1927 Humble O&R Co. Seismograph	890	800	Humble's Lassiter 1 proved dome April, 1928.
Steen .....Old dome	300	75	Salt evaporated here during Civil War from water from wells.
Whitehouse .....1927 Humble O&R Co. Seismograph	....	487	Humble's Van Hovenberg 1 proved dome in March, 1928, going into cap rock 487 ft.
VAN ZANDT COUNTY—			
Grand Saline Old dome	235	188	Salt evaporated by Indians and by white settlers starting 1845.

PROBABLE SALT DOMES
(Dome-like structures not definitely proven as salt domes by drilling)

HENDERSON COUNTY—			
La Rue.....1927 Roxana Pet. Corp. Seismograph	....	....	Reported as deep dome.
SMITH COUNTY—			
Mt. Sylvan.....1927 Humble O&R Co. Seismograph	....	....	Although found by Seismograph, dome also indicated by surface geology; top salt estimated 1000 feet.
WOOD COUNTY—			
Haynesville .....1927 Gulf Prod. Co. Seismograph	....	....	Surface geology confirms geophysical indications of dome.

STRUCTURES PROBABLY NOT SALT DOMES

ANDERSON COUNTY—			
Cronin .....1927 Roxana Pet. Corp. Seismograph	....	....	Located 6 miles south of Palestine; shooting indicated chalks higher than normal.
Salmon .....1927 Several companies Seismograph	....	....	Located on Missouri Pacific railroad, 14 miles south Palestine, and one mile north Houston County line; may be fault.
SMITH COUNTY—			
Sand Flat.....1928 Amerada Pet. Corp. Seismograph	....	....	Amerada drilled 5114-foot test; see accompanying article.
Troup .....1927 Amerada Pet. Corp. Seismograph	....	....	Located 3 miles northwest of Troup; although formerly regarded as possible deep dome, later geophysical work indicated no dome.
UPSHUR COUNTY—			
Kelsey .....1928 Amerada Pet. Corp.	....	....	Centers around town of Kelsey; large structure with considerable uplift indicated. Amerada's 6153-foot test mentioned in accompanying article.
VAN ZANDT COUNTY—			
Van .....1928 Pure Oil Co. Geology and Geophysics	....	....	Yielding prolific oil production from Woodbine sand several hundred feet thick; proven area 4000 acres; wells around 2800-3000 feet deep.

the prolific oil production of Van field, eastern Van Zandt County, as well as that in the Boggy Creek field, Anderson-Cherokee Counties. At Vann it has thicknesses as great as 500 feet, and at Boggy Creek it is as much as 400 feet thick, but in the latter field it has been found in some wells to be thinned, pinched or faulted out. Southeast of Boggy Creek on the Jarvis fault, Anderson County, Humble Oil & Refining Company's Southern Pine Lumber Company A-2 logged Woodbine from 4391 to 4929 feet, a total thickness of 538 feet for the formation, with several oil-saturated sands in the upper 250 feet. Several oil-saturated sand horizons have been found in eastern Cherokee County by the Humphreys and Colliton interests.

With respect to oil production possibilities around the salt domes and structures of East Texas an important point was brought out by B. Coleman Renick in the May, 1928, issue of the Bulletin of the American Association of Petroleum Geologists in a paper on "Recently Discovered Salt Domes in East Texas." He pointed out that domes which have pushed up through the brittle chalks and limes of the Cretaceous have deformed and faulted those formations greatly, and hence the deeper the dome the more regular the sands and the better the chance of finding the producing sand since it will not be confined to such a narrow belt and may extend over the top of the structure.

Aside from the known salt domes of the East Texas Basin, there are several structures in Northeastern Texas. Some were discovered by surface and subsurface indications, while others were first revealed in the intensive and extensive exploration campaign of 1927 and 1928 employing seismographs and other geophysical instruments.

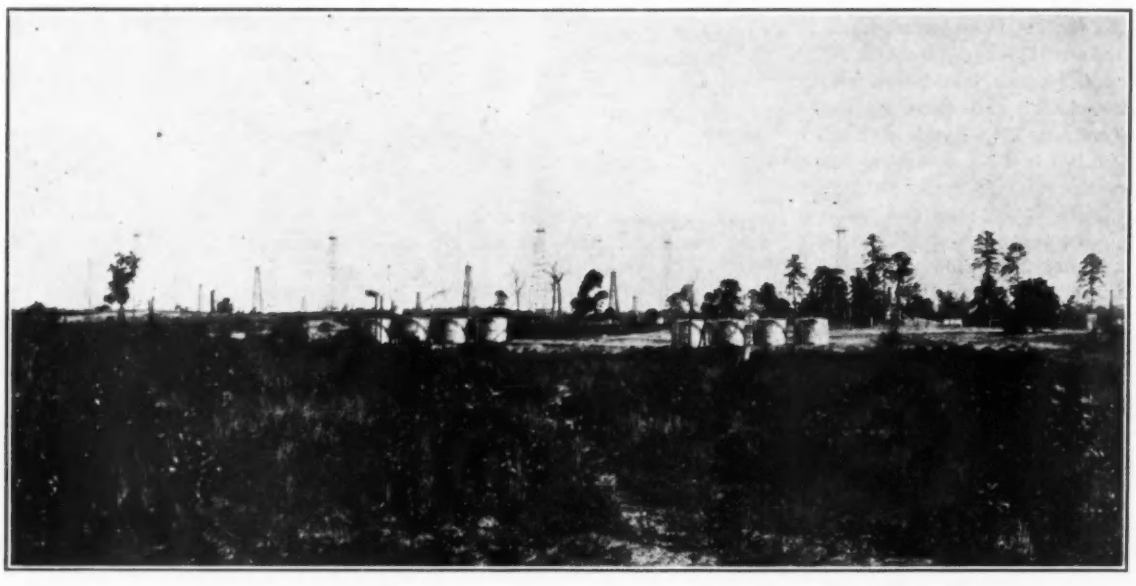
Sand Flat and Kelsey Structures

Among the interesting structures of this region are the Sand Flat structure, Smith County, and the Kelsey Structure, Upshur County, because of particularly deep tests which have been drilled upon them. The Sand Flat structure is three miles south of Steen dome and about 12 miles north of Tyler. Amerada Petroleum Corporation's Christian 1 on that prospect, F. Flores Survey, drilled in 1928, had surface elevation of 514 feet, went into the top of Woodbine sand at 5114 feet, testing water in that sand, and was abandoned at 5400 feet. It was the first well in Smith County to reach the Woodbine sand. On the Kelsey structure Amerada Petroleum Corporation's Wade 1, J. H. Fields Survey, proved the existence of considerable uplift. With surface elevation of 422 feet it topped Woodbine sand at 3605 feet, showed water in that sand, and was finally abandoned in Glen Rose formation of the Lower Cretaceous at 6153 feet about October 1, 1929. These structures are not regarded as salt domes, but as dome-like structures.

The above two structures as well as East Tyler and other domes in the eastern portion of the East Texas geosyncline are looked upon now with considerable interest because of their relative proximity to the big, flush East Texas field, which has offered encouragement for production from the Woodbine sand. Of those mentioned the Kelsey structure, about five miles west of Gilmer and centering around the town of Kelsey, is probably the most inviting at present from an exploration standpoint. For it is believed to be a relatively large structure, with large uplift, as indicated even by the above test of Amerada Petroleum Corporation, which may have been somewhat low on the structure, possibly north and east of the crest. Aside from the apparently favorable structural conditions, the Kelsey prospect also offers promising sand conditions in the Woodbine horizon, although the above mentioned wildcat tested salt water in it. For the east side of the structure lies only about 10 miles west of the Gladewater district of the large East Texas field. A large percentage of land on and around this structure is under lease, Amerada Petroleum Corporation having a single block of about 15,000 acres centering around the town of Kelsey, while substantial acreage around that block is held by Shell Petroleum Corporation, Humble Oil & Refining Company, Vacuum Oil Company and others.

Detailed data on salt domes and structures of the East Texas geosyncline appear in the accompanying table, and their locations are shown on the previously mentioned map.

As a final thought, it is quite logical to predict that exploration in the East Texas Basin following in the wake of discovery of the big East Texas field will eventually result not only in finding commercial production around present known domes and structures but also in discovery of additional structures suitable for petroleum accumulation.



Central portion of Kilgore field as seen from vicinity of the discovery well

General Geology *of* Northeast Mexico

By J. L. TATUM
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Monterrey, N. L., Mexico

THE writer describes briefly and gives the areal distribution of the Tertiary formations in northeast Mexico and compares them with their Texas equivalents. They become more marine. The regional dip is much greater, affording a better opportunity for study of their outcrops and assuring more certainty in their correlation.

The Cretaceous is only mentioned in describing very briefly the changes from the Texas to the Mexican section which occur in this region and their contribution as source material for the younger sediments.

The known structures are mentioned and structural trends described together with the theory as to their probable origin and age of uplift.

This paper was read before the American Association of Petroleum Geologists, San Antonio meeting, March 19, 1931, and is published in THE OIL WEEKLY *by courtesy of the Bulletin of the A.A.P.G.*

Acknowledgments: This paper is published with the permission of the Continental Oil Company. Credit is due to the following men with whom the writer has been associated for several years: J. M. Hamill, J. W. Fidler, E. A. Taegel, and Jarvis Garst, and to many other workers in the area. However, responsibility for all statements is the writer's.

THERE has been comparatively little published concerning the area. (See bibliography). Dumble published a paper years ago, which is long since obsolete, on the Tertiary of northeastern Mexico.[13] Bose and Cavings[6] in a bulletin of the Texas Bureau of Economic Geology described the Cretaceous of Northern Mexico and touched on the Tertiary. Besides a few papers on limited areas, this is all that has been published, in spite of the fact that for the past 10 or 12 years oil companies have had parties working in the area almost constantly. Few geologists agree as to the areal geology because of their different methods of attack and for the reason that most either used Dumble's old paper as a base and began their work in different areas, or used the contracts as published by Trowbridge,[17] which are far from being correct from the Carrizo up. There seems to be almost as much disagreement among the geologists of different companies operating in Southwest Texas because many of their paleontologists have taken their type sections from publications which are obsolete. This is not meant as a reflection on the early workers in the Gulf Coast Tertiary formations as all of those who have worked with these formations can testify as to the difficulties in their correlation.

Our information on this area has been gained from continuous work during the past six years. This work consisted of reconnaissance, somewhat sketchy, in parts of Chihuahua, most of Coahuila with the exception of the south part of the state and the more intensely folded areas, all of Nuevo Leon with the exception of the intensely folded parts, most of Tamaulipas, and detailed work with the aid of aerial photographs over 1200 square miles in the northeastern part of Nuevo Leon and of several scattered areas in the same state and in Tamaulipas, in which subsidiaries of Continental Oil Company have concessions. Work previous to this in the Tampico region and in widely scattered parts of the republic supplies a background.

Basis for Correlations in the Tertiary Formations

Formations in the Tertiary as described and mapped by Duessen[11] and modified by Bailey[1] have been taken as types and their nomenclature used in this report. Lithologic similarity and continuity are the chief basis for their correlation. The writer's knowledge from personal observation of these formations in Southwest Texas is confined to that part south of the Frio and Nueces Rivers. Where the type locality is north of these rivers our correlations of those formations are probably in error to approximately the same extent as described and mapped by the two previously mentioned authors. However, we believe that the Fayette-Frio contact as mapped by Bailey[1] should be somewhat nearer Roma and that there is probably some Gueydan in the vicinity of Rio Grande City.

As a key horizon the Carrizo sandstone was traced continuously from the international boundary near its type locality[17] to a locality approximately 15 miles southeast of the ranch Porvenir, situated on the Rio San Juan southwest of China, Nuevo Leon, where the typical sands of this formation are replaced by fine sands and shales. Contacts of other formations have not actually been traced continuously, although most, with the exception of the Mount Selman-Cook Mountain contact have been traced over wide areas.

Fossils and micro-fossils have been used to a slight extent as an aid in correlation. Both Hamill and Garst have shown some of our collections to several of the outstanding micro-paleontologists of the Gulf Coast and the differences of opinion have been great. This is probably due in a measure, to geologists of different companies having taken their type sections from different localities which

may have, in part been mapped differently and actually in many places not the same horizons, and to change in the range of the fauna in widely separated areas. Prompted no doubt by this confusion, Wendlandt and Knebel[2] have proposed a new system of nomenclature for the Eocene of East Texas. Possibly this should be done for the entire Gulf Coast; however, it should be done by some organization on some basis to which the geologists interested could agree.

Topography

For descriptive purposes the topography may be divided into three principal divisions: the Reynosa and coastal plain bordered on the west by Reynosa escarpment and on the east by the Gulf, the central area of low rolling hills, broad valleys and low gravel covered mesas, and the mountainous area to the west.

Reynosa Plain: From the gulf west to the Reynosa escarpment there is a very gently east sloping plain unbroken with the exception of the Rio Conchos and the Rio Grande and very shallow valleys amounting to little more than mere swales. These rivers have small tributaries, few of which cut into it, and none more than a few miles. The escarpment which ranges from one to 300 feet above the levels of the valleys on the west is irregular and broken by small streams cutting into it from the west.

Central Province: The central province is in turn divided into three sub-provinces, a series of low rolling hills and broad shale covered flats in the eastern part of the province, a series of long strike ridges known as the Ceja Madre in the north and central part, and a broad low shale covered area between the Ceja Madre and the mountains, broken by low flat topped gravel and caliche covered mesas. Some of these mesas cover large areas and the gravel on them effectively conceals the lower formations. One such mesa is south of Piedras Negras, Coahuila, and is bounded on the west by the Peyotes hills. It, like the Reynosa plain, slopes gently eastward and in a wide area is unbroken by streams. There are several such plains, covered by gravel from the mountains and sloping for varying distances from them. These are broken by occasional streams but otherwise are remarkably smooth and even. With the exception of these and here and there a small isolated mesa, the shale area between the mountains and the Ceja Madre is a region of broad valleys with gently rolling country intervening.

Mountainous Area: The mountainous area is divided into four provinces: the Sierra Tamaulipas and San Carlos, the Sierra Madre Oriental, a series of front ranges, and the central plateau region. The Sierra Tamaulipas and the Sierra San Carlos form a single range situated in central Tamaulipas and striking almost due north. The Sierra Tamaulipas being moderately rugged and reaching an elevation of about 3000 feet above sea level is connected by a low arch the Mesa Solis to the Sierra San Carlos. The Sierra San Carlos on the north reaches a maximum elevation of about 5000 feet above sea level.

South of Monterrey the Sierra Madre Oriental is composed of closely packed parallel mountain ranges separated by narrow and extremely steep walled canyons and reaching a maximum elevation of more than 12,000 feet. North of Monterrey the ranges are not so closely packed nor so continuous, nor do they reach to such heights. The Rio Grande flows around their north end to form the "Big Bend". Beginning with the Sierra Papagayos on the south, about 50 miles east of Monterrey and ending with the Sierra de Burros, west of Del Rio, Texas, on the north is a series of comparatively low mountains with moderately gentle slopes approximately paralleling the Sierra Madre which we have called the front ranges. These mountains are structurally distinct from the Sierra Madre Oriental and will be described in more detail later. The central plateau has many mountains some of which strike at large angles from the Sierra Madre Oriental, separated by broad and some perfectly flat valleys. Many of these valleys, or "bolsons", are the sites of ancient lakes filled with silt and eventually drained by streams which are now cutting into them. The lagoon at Torreon, Coahuila, and the Lago de Jaca on the Coahuila-Chihuahua boundary are existing remnants of these ancient lakes.

STRATIGRAPHY

Cretaceous

In Northern Mexico the Cretaceous undergoes a radical change from that of the Texas section and carries a different nomenclature. Bose and Cavings[6] divide it in accordance with the European system giving it the European names. In previous literature it has been given a series of names in reference to its lithologic units which are understood by all geologists familiar with Mexico and these names are used in this article.

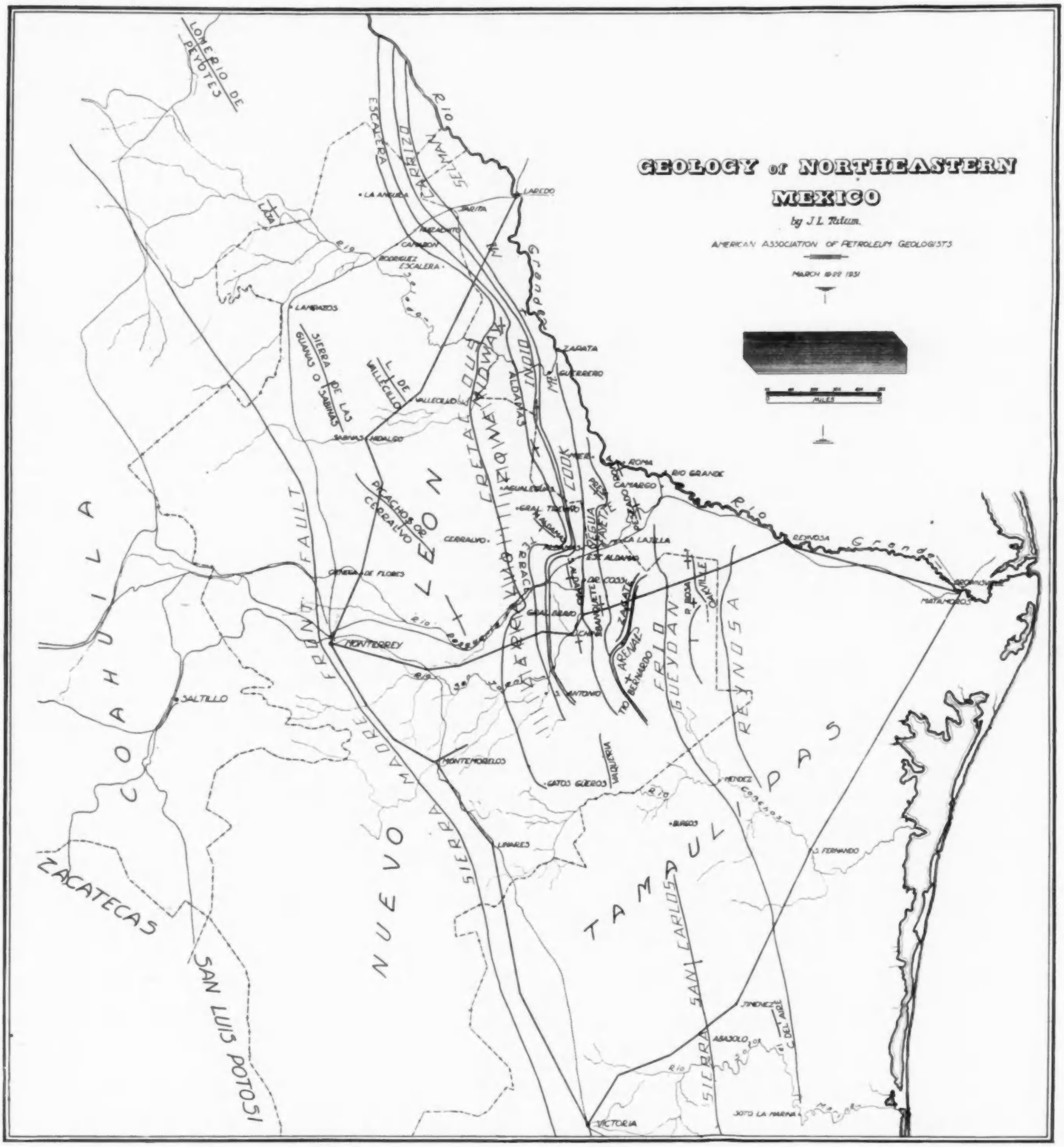
Mexican Equivalents of the Texas Section

Mexico		South Texas
Velasco		Escondido
Papagayos	Mendez	Taylor
		Austin
San Felipe	San Juan	Eagle Ford
		Buda
		Del Rio
		Georgetown
		Edwards
Tamasopa	Tamaulipas	Comanche Peak
		Walnut
		Paluxy
		Gen Rose
		Travis Peak

From the foregoing table it may be noticed that most formations have two names in Mexico. This is because they were first named in widely scattered localities and their descriptions were published without certainty of their age. The term Mendez is from the railroad station of that name west of Tampico. The term Papagayos is from the ranch of that name between the Papagayos and Picachos mountains east of Monterrey. Papagayos is the most commonly used of the two and is used in this article. The name San Felipe was taken from the town of that name on the railroad between Tampico and San Luis Potosi. The type locality of the San Juan is in La Laja hills on Salado River near the boundary between the states of Nuevo Leon and Coahulia. The name was taken from the ranch San Juan de la Mucha Agua. The term San Felipe is probably the better known of the two and for that reason is used in this article. Tamasopa is the original term for the thick series of Cretaceous limestones from the canyon of that name west of Tampico. The limestone in the south fields and in the Sierra del Boca del Abra being much different in character and by some thought to be somewhat different in age[3,4] from the limestone in the Panuco field and in the Tamaulipas mountains, the name Tamaulipas was proposed for the latter. Tamasopa being the older term, it is used for the entire series of massive limestones of the Lower Cretaceous underlying the San Felipe.

Tamasopa Limestone

Forming the mountain ranges of eastern and central Mexico is a very thick ordinarily massive limestone, which geologists associated with the Mexican Survey have con-



sidered middle Cretaceous in age following the European sub-division. This is the Tamasopa. It includes all of the Lower Cretaceous of Texas from the Buda down. Along the international boundary the Buda, Georgetown, and Edwards begin to take on the characteristics of the Tamasopa. Del Rio Clay either disappears entirely or more probably, is replaced by limestone. In a small stream a short distance south of the Oregano ranch house, south of Del Rio, Texas, and west of Eagle Pass, the Del Rio clay is decidedly more calcerous than farther north. On the Hacienda Mariposa there is no break between the Georgetown and the Buda and it is very probable that the Del Rio is a limestone similar in appearance to the formation above and below. In the "Control" well near Cameron, southwest of Laredo, a thin shale break of about two feet was reported at the horizon where the Del Rio should have been found. In the Sierra Picachos west of Cerralvo, there is about 400 feet of thin flaggy limestone interbedded with shale underlying massive limestone. The shale ranges in color from black to gray, in places white, the white being bauxitic. This may represent the Del Rio in that area.

The Tamasopa limestone differs considerably in color, texture and thickness of bedding. It is commonly massive, some beds being several hundred feet thick; however, at places there are exposures of several hundred feet of beds ranging from a few inches to only a few feet. Some of the beds have a peculiar nodular structure. The predominating color is a bluish gray but white and light gray beds are common and in some places the beds are black or nearly so. Most of the limestone is very compact and fine grained;

however, in places it is porous and cavernous. Particularly in the mountains, the beds are cut by small calcite veins and in some places are composed in part of minute crystals of pure calcite. Chert, ordinarily in nodules, occurs in the formation, but is not common throughout. This chert is ordinarily black and much of the gravel derived from the Tamasopa consists of this black chert. Pyrite is not uncommon to the formation and on weathered surfaces is generally altered to iron carbonate appearing as small nodules. In some places the formation is fossiliferous but ordinarily fossils are scarce, and being almost as hard as the matrix, they are difficult to find and extract. The darker parts of the formation are ordinarily very hard and compact. By dissolving a sample of this dark material in acid, a black very finely divided residue resulted, which took several hours to settle out of the solution and appeared to be very fine volcanic ash. In the south fields and in the Boca del Abra the formation is a reef limestone entirely different in appearance and texture from the ordinary phases of the Tamasopa. Bose and Cavings[6] report marls interbedded with thin limestone supposedly older than any Cretaceous known in Texas. The same authors report shaly limestone in the Burros and thin series of marl interbedded with limestone near Saltillo of Travis Peak age or slightly older. The thickness of the formation has never been satisfactorily measured except in its obvious thinner phases. West of Victoria, Tamaulipas, it is about 3000 feet thick and about 4000 in the Sierra San Carlos. It has been drilled through in the Panuco fields where its thickness approaches the lesser amount. It has been estimated as thick as 25,000 feet.

San Felipe

Within a relatively short distance south of the Rio Grande the Austin Chalk changes in appearance and its lower part is indistinguishable from the Eagle Ford below. The lowest part of the Austin and the Eagle Ford constitute the San Felipe. The San Felipe is identical with the Eagle Ford of south Texas in appearance, differing only in color. The limestone ranges in color from pinkish gray to black. The shales range from a greenish blue to black. In many places where the beds are black, freshly broken fragments give off an odor of petroleum. Both the limestone and shale generally show lamination, the lamination being due to very thin streaks of very fine sand. This limestone invariably breaks out into rectangular flags which are used extensively for building materials. The limestone used for door and window sills and for street curbs in Monterrey and polishes to a glossy black is San Felipe. The San Felipe probably rests disconformably on the Tamasopa. In the San Diego Canal near Oregano where a contact of the Buda with the Eagle Ford is exposed, the Buda was apparently subjected to erosion before the deposition of the Eagle Ford, but there is no angular unconformity. Wherever the contact between the Tamasopa and the San Felipe was observed, the change in lithology is marked. In the north the formation ranges in thickness from 600 to 1200 feet. In the south over the structural "highs" of the oil field, it is somewhat thinner.

Papagayos

South from Eagle Pass the upper part of the Austin chalk rapidly changes to gray compact poorly bedded shale. This change is quite noticeable on the east side of the La Laja low hills, immediately to the south of the Don Martin Dam along the Coahuila-Nuevo Leon boundary. This upper part of the Austin, together with the Taylor, constitutes the Papagayos of the Mexican section. It is ordinarily bluish gray shale very similar to the Taylor in south Texas and contains only a few thin very fine grained calcareous sandstones. These sandstones do not seem to occupy a definite horizon and in most sections are missing entirely. These beds constitute most of the Upper Cretaceous and are remarkably uniform from the vicinity of the international boundary to at least central Vera Cruz. They occur throughout the Plateau region with comparatively little change except near the western limits of the Cretaceous deposits where they are more sandy. They range in thickness from 2000 to 5000 feet.

Velasco

The type locality of the Velasco is in the vicinity of the railroad station of that name west of Tampico, on the road to San Luis Potosi. In the type locality the Velasco is very similar to the Papagayos, being slightly more sandy and supporting a somewhat denser type of vegetation. In this locality there are no sand beds proper in the Velasco, the sand consisting of fine grains within the shale, which are only noticeable when washing samples of the formation. There is some evidence of unconformity in that area and the faunal change is abrupt. We have never identified positively Velasco as such in the north; however, the assumption is that it is equivalent to the Escondido of South Texas. Within a relatively short distance the Escondido loses its sandy aspect of the Rio Grande region and in the vicinity of Cameron on the railroad from Laredo to Monterrey, is probably represented by a few hundred feet of gray shale, only slightly more sandy than the underlying Papagayos. Southwest of Las Tortillas and east of Vallecillo, the upper part of the Cretaceous is represented by gray shales with a few thin irregularly bebbed shaly sandstones. This sandy phase may represent the Escondido and Velasco in this region. On the old road from Los Ramones to China, at the crossing of the Arroyo Salinas, there are some sandy shales and poorly bedded shaly fine grained sandstones from which Hamill collected Foraminifera which he considered Velasco in age. These are probably the beds which Dumble classified as Midway in that region. The thick sandstones reported by Bose and Cavings[6] and Kane, between Saltillo and Paredon and the Cardenas beds[4] in the state of San Luis Potosi, probably represent the Escondido.

Eocene

The Eocene in Northern Mexico is similar to that described in South Texas. It differs only in being somewhat thicker and it is practically all marine.

Cretaceous-Eocene Contact

The contact between the Cretaceous and the Eocene crosses the Rio Grande about 10 miles below the town of Guerrero, Coahuila. From there it strikes slightly east of south to a point a few miles east of the ranch La Anguila, where Midway sandstones are exposed east of a large lagoon; from there it strikes more to the east, crossing the railroad from Laredo to Monterrey between the stations of Huisachitos and Cameron to a point on the south side of the Ceja Madre north of Las Tortillas, and from there turns southward passing between the ranches of El Aguila and Zancudo and crosses the Rio Salado a short distance above the town of Las Tortillas. From there it strikes almost due south, crossing the Rio Sabinas at a point known as Piedras Pintas and from there south to a hill known as Cerro Colorado west of Los Herreras. It crosses the Rio Pesqueria south of the previously mentioned point,

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where it swings sharply southwest for a few miles and again swings south crossing the National highway from Monterrey to Matamoros, about midway between Los Ramones and the Ranch Puerto del Agua, where it forms a prominent scarp. From here it swings southeast, passing east of the town Santa Engracia and immediately south of the ranch Gatos Gueros northeast of Linares, and from there swings east around the north end of the San Carlos Mountains. From a few miles east of Cruillas it swings south and it occurs at the base of the Cerro del Aire northeast of Abasolo, crossing the Soto La Marina. In many places the contact is obscured by alluvium or gravels, but most of it is well exposed.

Midway

The Midway in this area is divisible into two zones: the lower one consisting of sandstones and brown weathering clays, and the upper zone consisting of brown weathering clays which contain many ironstone concretions. The lower sandy zone is in many places either missing or overlapped by the upper clay zone. These lower sandstones which ordinarily contain many fossils mostly *Venericardia*, are well described by Trowbridge[17] from his outcrop along the Rio Grande. They do not differ essentially from these descriptions in Northern Mexico. North of Las Tortillas, on the north flank of the Salada arch, they occur only as lenses on the Eocene and Cretaceous contact. At Las Tortillas the lowest Midway is blue shale, very similar to the Papagayos and determinable only on its fossil content. South of Las Tortillas, in the vicinity of the ranch La Lajilla, the lower sandstones are well developed, but fossils are somewhat scarce. About a mile west of the ranch, there is a thick medium to coarse grained sandstone capping a lone mesa overlying about 10 inches of fossil soil on top of Cretaceous clay. These lower sandstones are well developed from this point south. The basal member is seen on the road from Cerralvo to Los Herreras, where it consists of sandstones containing fossils in profusion. This same sandstone caps the hill known as the Cerro Colorado between Los Herreras and Los Ramones. It is filled with fossils here also. In the vicinity of Gatos Gueros there are sandstones containing plentiful *Venericardia* overlying the Cretaceous. We have never been able to measure the Midway with any degree of accuracy. Until such date as the micro-paleontologists can agree on the thickness of this formation from the wells being drilled through it, we assume it to have a minimum thickness of 1500 feet.

WILCOX GROUP

Indio Formation

The Indio near the Rio Grande is entirely similar to that in South Texas. In the section south of Laredo on the road between the ranch Sauz and Las Tortillas, it consists of about 2000 feet of sandy shale with thin beds of fine and medium grained, generally impure sandstones, a few of which contain fossils and some thin impure limestones. It contains some large calcareous concretions and some small ironstones. The clay in many places contains gypsum, and both the sandstones and shale ordinarily have a small amount of mica. The sandstone is ordinarily fine grained, generally gray, but in places brown and generally weathers brown. Many fossils were first observed in the Indio north of the ranch Escalera, where there are a few beds containing *Venericardia* and some small oysters. The fossils increase gradually southward to the vicinity of Los Herreras, where they form a prominent fossiliferous zone that continues farther south. On the road to Monterrey, west of China, there is about 1000 feet of soft, fine grained, gray sandstones near the base of the formation containing a great profusion of large *Venericardia* called by Dumble *Venericardia popocapensis*. Overlying these fossiliferous beds west of China, is a series of gray shales which weather brown, containing some fine sand and small iron carbonate concretions and thin beds of fine grained flaggy sandstones. These beds are similar in appearance to the Indio in the north. In this area they are 650 feet in thickness. The total thickness of the formation west of China is about 2000 feet, the same as that south of Laredo.

Carrizo Sandstone

The Carrizo sandstone, as in South Texas, consists of a thick series of massive fine to coarse grained, white, gray, and red sandstone which ordinarily contains layers and lenses of sandy gray shale which weather brown. The sandstone is generally composed of clear quartz grains, many of which are stained red by the cementing material. It is ordinarily crossbedded. Due to differences in the firmness of the cementing material, castelated forms are common. This formation has been used as a key horizon in mapping the Eocene in Northeastern Mexico. It was traced continuously from its outcrop on the Rio Grande to a locality 15 or 20 miles southeast of the ranch of Porvenir on San Juan River, south of China. Throughout almost all this area it dips at a steep angle, 5°-15° and its general appearance is such that it can rarely be confused with any other formation in the area. Some of the sandstone in the base of the Midway, and a few sandstone lenses in the Cook Mountain have a similar appearance. These beds can be distinguished everywhere by their relationship to the beds above and below, and there is ordinarily no reason to confuse them with the Carizzo. This formation is reported as being non-marine in Texas, and for the most part, is non-marine in this area. However, sandy shale interbedded with the sandstone commonly contains Foraminifera. These may possibly be derived from older formations. Trowbridge gives its thickness on the Rio Grande as being about 400 feet, and in the vicinity of Sauz on the road from Laredo to Las Tortillas, it has a measured thickness of 850 feet. West of China it has a measured thickness of about 400 feet. West of China the sand becomes more fine grained and there is much more shale in the formation. Southeast of the ranch Porvenir the sandstones are thinner and fine grained and the shales are even more plentiful. We have not determined whether the formation thins out entirely toward the southeast of this place or is replaced by shale.

Bigford Formation

Trowbridge[17] describes a formation above the Carrizo, along the Rio Grande, similar in appearance to the Mount Selman above, as Bigford. His chief reason for the separation of this formation from the Mount Selman is that he considered it as occurring in continuation of the strike of the Carrizo from the north, and for that reason, thought that it replaced part of that formation. In the vicinity of Carrizo Springs the dip of the Carrizo is very low, only a few feet to the mile. Immediately southward, where it crosses the Rio Grande, the dip is 4° or 5°, and the width of the outcrop is sufficiently great to contain a full thickness of Carrizo, as found in its type locality. For this reason we consider the Bigford a misnomer.

CLAIBORNE GROUP

Mount Selman, Cook Mountain

In this area the Mount Selman and Cook Mountain dip steeply and although the formations are divisible on the same basis as in South Texas, we have not divided them except locally. In appearance they are essentially the same as described in South Texas. However, the Mount

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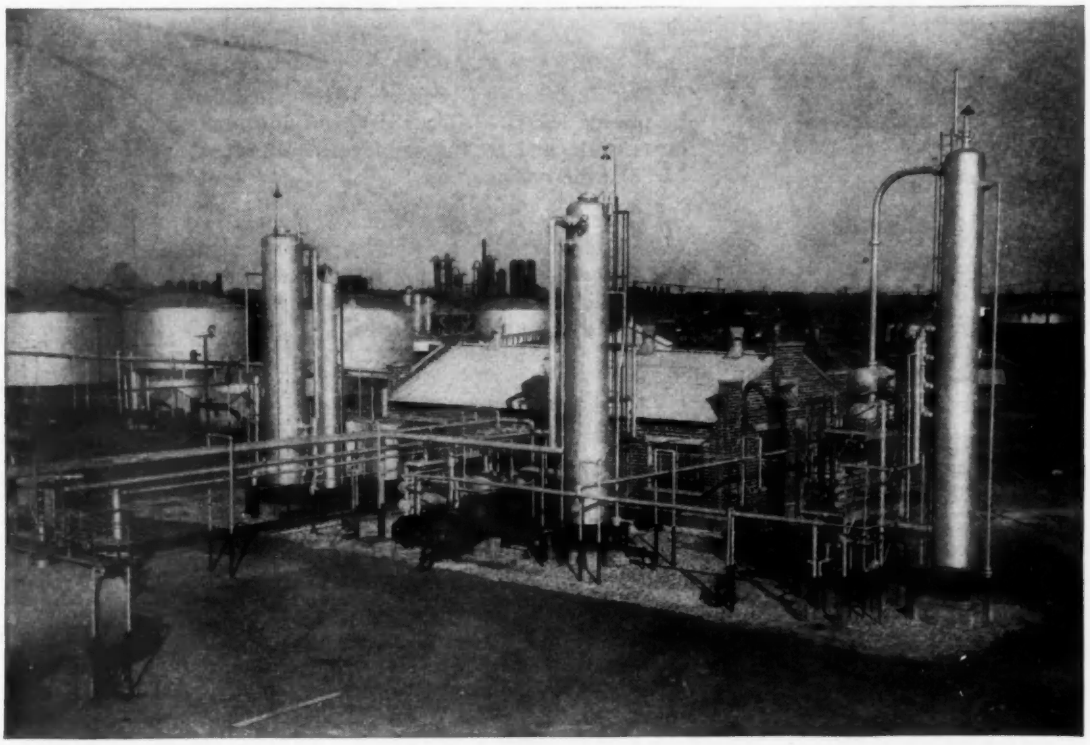

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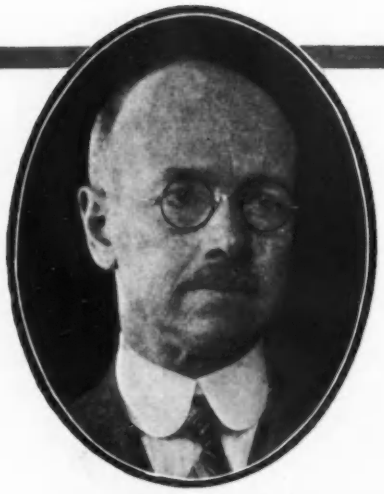

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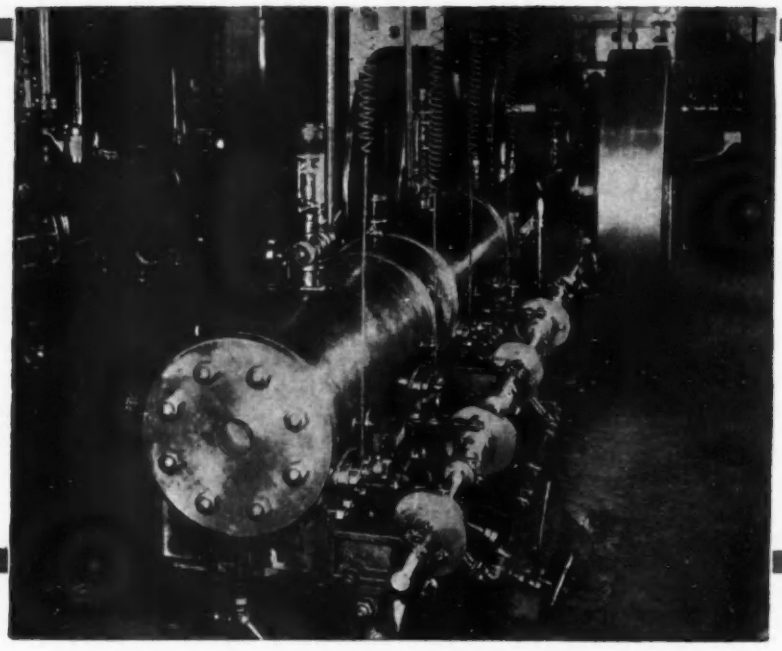

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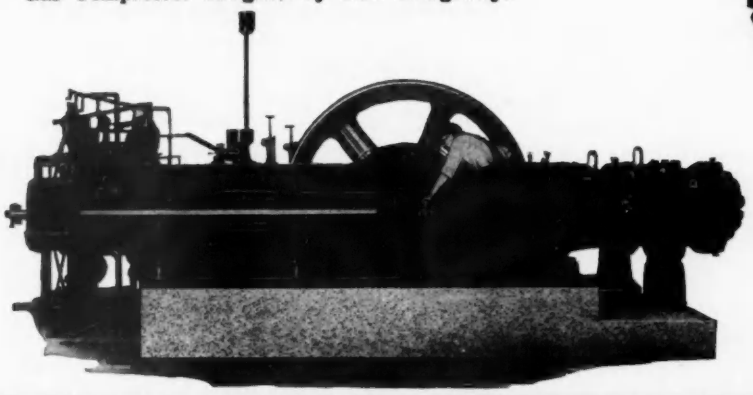

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Selman is marine in at least part of the area, and the Cook Mountain is both marine and non-marine. In places the formation contains many fossil leaves and in some places thin bands of lignite. Many of the sandstones contain fossils, chiefly *Venericardia,* and a few oysters. In well samples it contains Foraminifera, in profusion but on the surface in many places they are leached out by evaporating surface waters. In general, the Cook Mountain contains less glauconite than in Texas. In the vicinity of Aldamas and China a few beds contain sufficient glauconite to give them a red color on weathering, which is so common in South Texas. South of China the red weathering bed becomes more common. These two formations have an average thickness of about 2100 feet.

Yegua

East of Aldamas and China, we have a thick series of greenish and gray clays weather brown, contains many ironstone concretions and some thin ironstone bands and here and there medium to fine grained sandstone. These overlie a heavy massive sandstone in the upper Cook Mountain, entirely different in appearance from the sandstone in the Yegua. In this area the formation is ordinarily marine; contains many small fossils and here and there a thin bed of small oysters. Gypsum is common, occurring as selenite. Between the San Juan and Rio Grande, the formation is somewhat more sandy and contains more oysters. However, it retains its distinctive color on weathering and the clays in the formation are similar to that as mapped by Duessen east of Cotulla, in tains a few lenses of chocolate colored clays, but these are not common. The general aspect of the formation is very similar to that as mapped by Deussen east of Cotulla, in La Salle and McMullen Counties. From San Juan river to a locality approximately 25 miles southeast of China, we have mapped this formation with as much detail as is possible, which in most places is much more detailed than the scale of the accompanying map permits us to show it. North of this river we have not traced the contacts over an extended area. The brown weathering clays at Zapata, Texas, we consider as equivalent to this formation, and not Cook Mountain, as Trowbridge[17] maps them. The heavy sandstones between Roma and Ramereno we consider above this formation and within the Fayette. The large oyster beds at the town of Mier are in the Fayette and we have placed the Fayette-Yegua contact about a mile west of that town. There is much disagreement about the Yegua in this area, but regardless of the relative age of the Yegua as we have it mapped, it is unquestionably a lithologic unit and distinctive from the formations above and below. It has a measured thickness of about 1700 feet on the San Juan.

JACKSON GROUP

Fayette

The Fayette in this area consists of a thick series of light colored soft and poorly bedded sandstones containing oysters and silicified wood interbedded with gray sandy shales. Near the Rio Grande the oysters are large and very plentiful. Southward, the oysters become smaller and comparatively scarce. In appearance the formation is very similar to the Cook Mountain and there is no single characteristic by which they might be distinguished. It generally is somewhat softer than the Cook Mountain, contains less fossils, with the exception of oysters, and silicified wood is more common. It contains less glauconite than the Cook Mountain, but it cannot be identified positively by any of these characteristics. In places it contains a bed of chocolate colored clays and toward the top the chocolate clays are common. Where it occurs in contact with the Cook Mountain it is impossible to distinguish the two formations with any degree of certainty. South of the old road from China to Matamoros only the top of the formation occurs, which more properly belongs to the local formation which we have called the Arenal. This formation has a measured thickness of about 2300 feet along San Juan River. It disappears entirely toward the south, except as mentioned later.

Arenal Formation

Along the fault which forms the east side of the Zacate structure, there is much distorted series of chocolate colored clays with fragments of soft medium grained yellow and gray sandstones. Near this fault the sandstone occurs as boulders, angular and ranging in size from a few inches to several feet. Toward the southeast these chocolate colored clays continue and south of the Matamoros-China road are interbedded with sandstones similar in texture to that already described, but occurring in beds rather than boulders. Farther south, in the vicinity of Los Cerritos, it is represented by massive sandstone at the base, by some volcanic ash and chocolate colored clays. At this place it is probably not more than 200 feet in thickness. Northeast of Ochoa the chocolate clays and soft sandstones which we have mapped as Fayette are probably the equivalent of this formation.

Frio

Overlying the Arenal, a series of greenish clays contains much gypsum and some thin beds of very fine grained sandstones many of which dip at steep and variable angles. The outcrop of this formation ranges in width from almost nothing near the Tamaulipas-Nuevo Leon boundary to more than 30 kilometers east of China. It forms a typical topography consisting of low rounded hills and broad grass covered flats. Water holes in streams that cross this formation are invariably impregnated with salts, and salt loving plants are abundant along the outcrop. Bailey's description of the Frio in South Texas applies to the formation in this area. Microscopic fossils are rare, but foraminifera are plentiful. However, there are zones in which these are absent also. Toward the top of the formation the clays become lighter in color and are similar in appearance to some of the clays in the Gueydan above. North of the Tamaulipas-Nuevo Leon boundary, as far as the railroad east of Ochoa, the Frio is almost completely overlapped by the Gueydan above. There is a broad silt covered valley between the Gueydan scarp and the Fayette on the west. Toward the base of this scarp east of Ochoa, we found a small exposure of clays similar to the Frio. North of this place we have done very little work and in trips across that area, have not noticed any beds that are unquestionably Frio. Northwest of Rio Grande City, Texas, and east of Roma, the Frio is well developed. It seems probable, however, that the contact in that area between the Fayette and Frio should be somewhat nearer Roma. The clays northeast of The Texas Company well at Roma look very much like Frio.

OLIGOCENE

Gueydan

Unconformably overlying the Frio, is a thick series of beds composed of volcanic material which are similar to the beds described by Bailey in South Texas as Gueydan. As already mentioned, these beds completely overlap the Frio in places. The basal member consists of a medium grained sandstone locally silicified, and in places very fossiliferous, which forms a prominent scarp easily traceable from the area north of the Tamaulipas-Nuevo Leon boundaries, south through Mendez and around the east side of the San Carlos Mountains to the Soto la Marina river,

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and from there it is reported, considerably beyond Tampico, where it is the basal Oligocene.[6] [12]At Mendez the basal member is a reef limestone forming a high westward facing scarp. This formation is not so readily divisible in three members, as was done by Bailey[1] in South Texas, but with the exception that in this area the formation is fossiliferous and the material becomes less obviously volcanic in origin southward, Bailey's descriptions of it in South Texas could very well apply here. Beds of pure volcanic ash are common, and in the vicinity of Huisachitos, near the Nuevo Leon-Tamaulipas boundary, there is a thick bed of white volcanic ash at the top of the formation. Near the middle of the formation is a comparatively thick series of coarse to medium grained sandstones poorly bedded, but ordinarily fairly massive, which forms a prominent scarp that is traceable for miles. North of Puerto Rosa, near the eastern boundary of Nuevo Leon, the scarp formed by these sandstones is covered by a thick bed of gravel composed mostly of chert pebbles derived from the Tamasopa and dipping the same as the underlying sandstones. At this place this scarp swings sharply east and is broken by a stream cutting through it. From here it continues south forming a high westward facing scarp which reaches an elevation of more than 1000 feet above sea-level. We have never been able to determine to our own satisfaction, whether or not these gravels are a part of the formation or younger in age. Southward, east of the San Carlos Mountains, the formation contains many beds of gravel derived from the nearby Tamasopo. About midway between these sandstones and the base of the formation there is another ridge forming sandstones interbedded with green bentonitic clays. Large oysters more rounded and smoother than the large oysters of the Eocene occur commonly within this horizon. There is no question but that the Gueydan in this area is the northward continuation of beds of the Soto la Marina region definitely placed in the Oligocene[6 12] by different authors.

Miocene and Younger

East of the ranch Huisachitos, overlying a thick volcanic ash bed, there is a series of medium to coarse grained sandstones interbedded with clays which weather yellow. We have placed these tentatively in the Oakville. The basal member of this series is coarse massive sandstone ordinarily lenticular and commonly forming prominent but short strike ridges. East of Huisachitos there is an outcrop of siliceous material which appears to be a sill, similar to the chalcedony of Duval County. This material also occurs in several places somewhat higher in the section. Above these sandstones and clays is an area several miles wide in eastern Nuevo Leon and immediately east in Tamaulipas and below the Reynosa escarpment, which is covered by a light colored sandy soil supporting a comparatively dense vegetation in which exposures are rare. There seems to be some volcanic material, probably thin beds of ash, but beyond this we have been unable to gain a very good idea of the lithology. Above this the Reynosa forms a scarp broken and not quite so prominent as in South Texas, but composed essentially of the same materials.

Gravel Terraces

Along the San Juan there are three distinct terraces, the upper being the most prominent, covered with gravel derived from the Tamasopo on the west. These gravels are similar to those of the Reynosa and by many have been called Reynosa in age. It is obvious however, that they are of different ages. The gravels mentioned as occurring on sandstone ridges within the Gueydan may represent ancient terraces. The higher hills throughout the Frio outcrop are approximately the same elevation and are covered with a light coating of chert gravel, much finer than that ordinarily found covering river terraces or within the Reynosa. Between Huisachitos and Puerto Rosa is a hill of massive Oakville sandstone in which there are ancient potholes filled with gravel, indicating the bed of an ancient stream flowing northward, comparable in size with the present San Juan. Along the Arroyo Lobo, south of Zacate Station, and in several of its larger tributaries, we found elephant teeth and tusks in stream alluvium. The occurrence of equus teeth in gravel thought to be Reynosa near Rio Grande City may be in younger terrace gravels, which, if they occur at the approximate elevation of the present Reynosa, would be indistinguishable; therefore, this occurrence does not necessarily prove the Pleistocene age of the Reynosa. The occurrence of elephant remains in stream alluvium undoubtedly younger than Reynosa, lends strength to this view.

(*Continued on page* 78)

BIBLIOGRAPHY

The following are the publications to which special reference has been made, or which have a special bearing on the region:

BAILEY, THOMAS L.:
1. The Gueydan, a New Middle Tertiary Formation from the Southwestern Coastal Plane of Texas. *Univ. of Texas Bull.* 2645, *December* 1, 1926.
BAKER, C. L., AND BOWMAN, W. F.:
2. Geological Explorations of the Southeast Front Range of Trans-Pecos, Texas. *Univ. Texas Bull.* 1753, *pp* 61-172, *September* 20, 1917. Reprint (in part) *Univ. of Texas Bull.* 3001, *pp* 190-200.
BELT, BEN C.:
3. Stratigraphy of the Tampico District of Mexico. *Bull. Am. Assoc, Petr. Geol., Vol* 9, *pt.* 1, *Jan.-Feb.*, 1925.
BOSE, EMIL:
4. La fauna de moluscos del Senoniano de Cardenas, San Luis Potosi, Mexico. *Comision Geologica, Boletin* 24; *Instituto Geologico* 1906.
5. Vestiges of an Ancient Continent in Northeast Mexico. *The American Journal of Science, Volume* 6, *pp.* 127-136, 196-214, 310-337, 1923.
BOSE, EMIL, AND CAVINGS, O. A.:
6. The Cretaceous and Tertiary of South Texas and Northern Mexico. *Univ. of Texas Bull. No.* 2748, *December* 22, 1927.
BURCKHARDT, C.:
7. Estudio geologico de los Alrededores de una parte del Rio Nazas, etc. *Parerg. d. Instituto Geologico de Mexico, Vol.* 3, *pt.* 2, 1909.
8. Faunas jurasicas de Symon (Zacatecas) y faunas cretacicas de Zumpango del Rio (Guerrero). *Bol. d. Instituto Geologico de Mexico, No.* 33, 1921.
9. Faunas del Aptiano de Nazas (Durango). *Bol. de Instituto Geologico de Mexico, No.* 45, 1926. (1925).
CRAGIN, FRANCES WHITTEMORE:
10. Paleontology of the Malone Jurassic formation of Texas. *U. S. Geol. Sur. Bull,* 266, 1905.
DUESSEN, ALEXANDER:
11. Geology of the Coastal Plain of Texas, West of Brazos River, *U. S. Geol. Sur. Professional Paper* 126, 1924.
DICKERSON AND KEW:
12. The fauna of a Medial Tertiary Formation and the Associated Horizons of Northeastern Mexico. *Proc. California Acad. Scie. 4th ser., Vol.* 7, 1917.
DUMBLE, E. T.:
13. Tertiary deposits of Northeastern Mexico, *Calif. Acad. Scie., preceding* 5, *No.* 6, 1915.
JONES, RICHARD A.:
14. A Reconnaissance Study of the Salado Arch, Nuevo Leon, and Tamaulipas, Mexico. *Bull. Am. Assoc. Petr. Geol. Vol.* 9, *pt.* 1., *Jan.-Feb.*, 1925.
SCHUCHERT, CHARLES:
15. Text Book of Geology, Volume 2, John Wiley & Sons, 1923.
STANTON, T. W.:
16. Mesoic History of Mexico, Central America and the West Indies. *Geol. Soc. Am. Bull* 29, *pp.* 601-606, 1918.
TROWBRIDGE, A. C.:
17. A Geologic Reconnaissance in the Gulf Coastal Plain of Texas, Near the Rio Grande. *U. S. Geol. Sur. Professional Paper* 131, *pp.* 85-107, 1923.
UDDEN, JOHAN AUGUST:
18. Report on a Geological Survey of the Lands belonging to the New York and Texas Land Company, Ltd., in the Upper Rio Grande Embayment in Texas. *Augustana Library Pub. No.* 6, 1907.
UDDEN AND OTHERS:
19. Review of the geology of Texas. *Tex. Univ. Bull.* 44, 1916.
VAUGHN, THOMAS WAYLAND:
20. Reconnaissance in the Rio Grande Coal Fields of Texas. *U. S. Geol. Sur. Bull.* 164, 1900.
21. Geological History of Central America. *Geol. Soc. of Am. Bull.* 27.
WENDLANDT, E. A. AND KNOBEL G. MOSES:
22. Geology of East Texas, with a Discussion on Salt Movements With Special Reference to the Mount Sylvan Salt Dome. *Bull. Amer. Assn. of Pet. Geol.*

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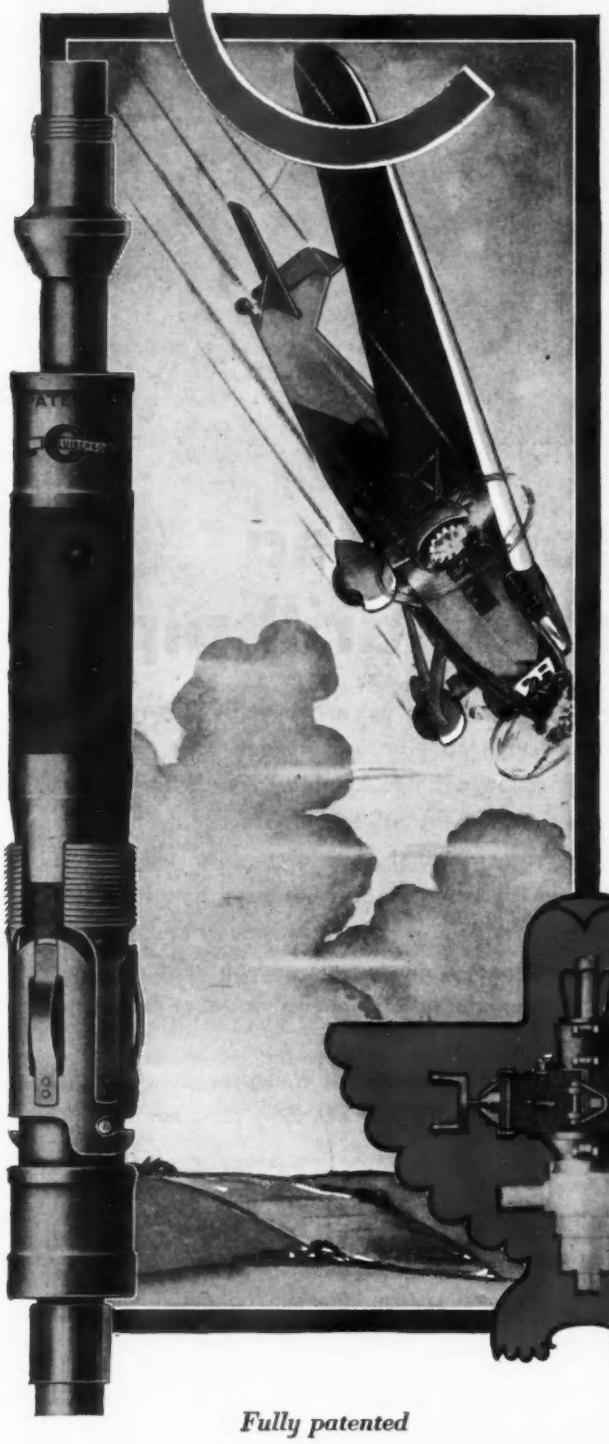

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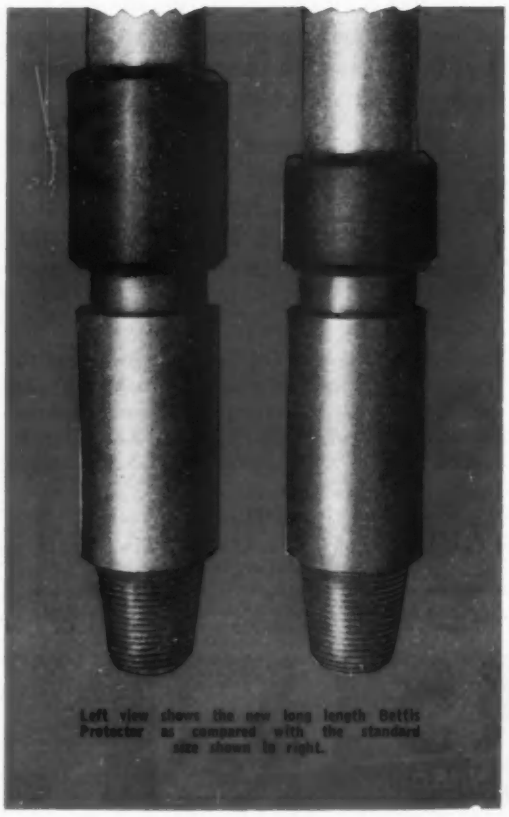

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Markets • Production • Crude Prices

H. J. STRUTH, ***Staff Economist, Houston, Texas***

United States Production Up; East Texas Again Responsible

Increasing 92,650 barrels to a new peak of 597,550 barrels daily average, East Texas again was responsible for sending the production curve in the United States upward. Declines in other areas, however, were sufficient to offset East Texas so that the net increase for the United States was only 13,700 barrels—2,500,650 barrels for the week ending August 1, as against 2,486,950 barrels for the week previous, as reported by the American Petroleum Institute.

Slight gains in West Texas helped the new East Texas pools in the increase so that the total for the state was up 93,850 barrels, the only other important gain being 19,700 barrels in California. Kansas and Eastern States were slightly up.

Oklahoma showed a decline for the week of 56,900 barrels, of which 45,700 barrels represented Oklahoma City, where producers are making a determined effort to secure a price of $1.00 per barrel for their crude. Declines in other areas were negligible.

A general decline in field operations is shown in statistics covering both completions and new wells. Completions numbered 185, of which 237 were oil wells, a decrease of 52 wells and 19 oil wells for the week. Initial production reported for the 237 wells was 814,000 barrels, a decrease of 72,000 barrels from the previous week. More than 80 per cent of the oil wells and initial production was in Texas.

Threat of the governor of Oklahoma to close in all but stripper wells in his state unless the price was $1.00 per barrel by August 1, materialized Tuesday.* In Texas the legislature apparently has made no progress in passing legislation which might control the flood of oil from East Texas. In the meantime additional outlets provided by pipe lines and heavy shipments by rail make the increase in output possible. Continued drainage of properties of those who are inclined to abide by proration rules through unrestricted flow of wells operated by open violators of the order, has resulted in a disposition to entirely abandon the idea. The latest move at Austin is a message from Governor Sterling suggesting to the legislature that the two per cent gross production tax be changed to two cents per barrel flat, a procedure that would, so far as state revenue is concerned, be equivalent to increasing the price to $1.00 per barrel.

California's Market Picture Reversed in Past Two Years

A slightly improved domestic demand for petroleum products in California and a shrinking demand from certain out-of-state districts have changed the general picture from that of two years ago. Local consumption has shown a gradual increase, but this climb has been offset by indications of a shrinkage to other sections of the world. The increased use of natural gas has reduced the consumption of fuel oil in many localities, particularly in the San Francisco Bay district. The drop in demand is not necessarily alarming, but it marks the entry of certain Mid-Continent competitors who have largely concentrated on territories not dominated by California.

Production has dropped to about 500,000 barrels and seems well in hand. Santa Fe Spring and Playa del Rey are the only fields of any consequence that are over their allowables. Kettleman Hills will be held to about 60,000 barrels, as against a much higher potential. All of the smaller fields are within their allotments. The average production for the week was especially satisfactory.

A "buy as you would sell" campaign is being waged by civic leaders, with the view of coaxing the public to buy from dealers quoting regular gasoline prices. There is some doubt concerning the outcome of this campaign, since the difference between the major and cut-price gasoline averages four cents.

Consolidation of the two umpires' offices should strengthen the position of curtailment. The expense of the two offices had become rather high for such lean times. A closer co-operation between the umpire, the sales agency and leading producing companies is also seen.

The ratio of refinery runs to crude production is fairly constant. Too much gasoline is being refined in some quarters from cheap crude, but major refiners have reduced runs to a minimum.

The crude price schedule appears safe, the upward revision in the Mid-Continent having been an aid. Purchasing companies are willing to pay present prices, as long as production is held to the allowable.

Oklahoma Production Down To 424,650 Barrels Daily

Oklahoma oil production went into low figures for the week ending August 1 with a daily average of 424,650. The Oklahoma City field accounted for the greater part of this drop. This pool averaged only 65,810 barrels per day against an average of 111,545. The decrease at Oklahoma City was 45,735 barrels per day, while that for the whole state was 56,970 barrels per day. Seminole with 134,000 barrels for the past week recorded a drop of 12,000 barrels per day.

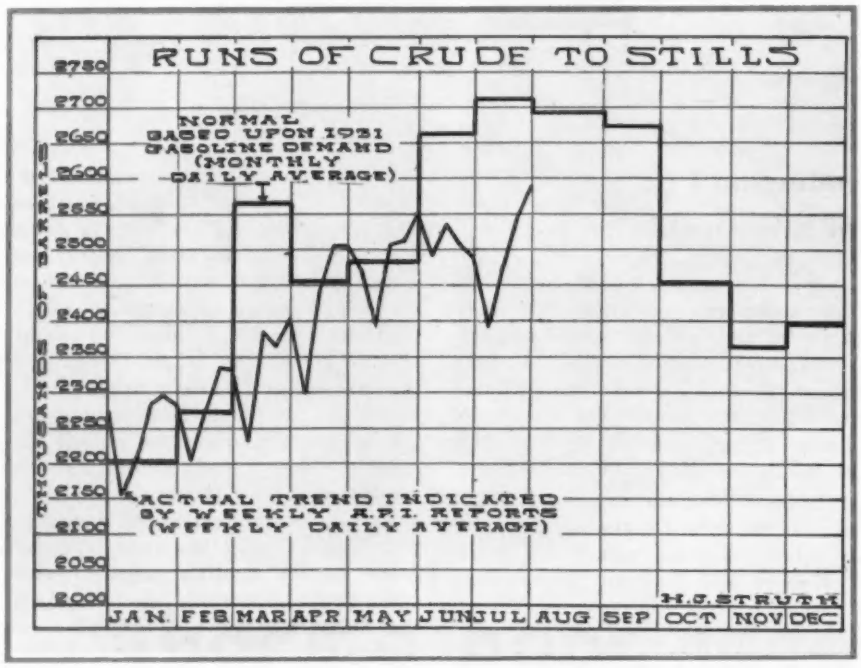
This situation in Oklahoma is the working of the matching of strength between producers and purchasers. Oklahoma City producers are still bent on having $1 a barrel for oil, while purchasers seem equally as adamant about reaching that figure.

Each side to this controversy is watching the political horizon at Oklahoma City, where Governor William H. Murray is preparing his executive order through which he proposes to shut down all Oklahoma fields now under proration until the price for oil is $1 a barrel.

The Oklahoma City pool closed the month of July with its output short of the allowed total by 3,483,927 barrels. Pro-

*See page 40.

MARKET SECTION



ducers elected not to produce wells at prices prevailing so that the output was that much less than was granted under the last proration order of the Oklahoma Corporation Commission. Total production for July in the Oklahoma City pool was 4,908,830 barrels. Pipe line runs from the pool in that month were 4,892,303 barrels.

There was some evidence of the voluntary shutdown losing its force toward the end of the month when several concerns resumed higher flowing rates on wells. On July 29, Indian Territory Illuminating Oil Company produced 19,342 barrels from eight wells; Champlin Refining Company had a total for that date of 10,791 barrels from six wells; Oils, Inc. produced 17,960 barrels from three wells. Champlin Refining Company is operating its properties under an injunction from the federal district court and never did join the movement to reduce output until a better price is posted. The Indian Territory Illuminating Oil Company joined the shutdown movement after it had gained headway on condition that offsets to its wells be not produced.

There is now a question of what disposition will be made of the 3,483,927 barrels by which producers fell short of their allowable in July. Apparently producers consider this to their credit for making up at a later period. Some

Crude Runs to Stills, Gasoline Stocks and Gas and Fuel Oil Stocks

Week Ending July 25, 1931

(Figures in barrels of 42 gallons)

District—	Potential Capacity (Daily) Reporting	Per Cent	Crude Runs to Stills Total	Daily Average	Per Cent Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	633,700	100.0	3,382,000	483,100	76.2	6,489,000	9,576,000
Appalachian	149,600	137,400	91.8	823,000	117,600	85.6	1,338,000	1,420,000
Indiana, Illinois, Kentucky	436,300	421,500	96.6	2,339,000	334,100	79.3	5,483,000	3,847,000
Oklahoma, Kansas, Missouri	485,700	435,200	89.6	2,073,000	296,200	68.1	2,840,000	5,160,000
Texas	838,200	765,400	91.3	3,766,000	538,000	70.3	6,822,000	10,622,000
Louisiana-Arkansas	233,100	230,500	98.9	1,281,000	183,000	79.4	960,000	2,811,000
Rocky Mountain	159,400	142,300	89.3	416,000	59,400	41.7	1,676,000	829,000
California	912,500	880,100	96.5	3,519,000	502,700	57.1	*11,681,000	98,528,000
Total Week July 25	3,848,500	3,646,100	94.7	17,599,000	2,514,100	69.0	37,289,000	132,793,000
Total Week July 18	3,848,500	3,646,100	94.7	17,311,000	2,473,000	67.8	37,377,000	132,956,000
Total July 26, 1931	3,686,400	3,528,400	95.7	17,630,000	2,518,600	71.4	44,751,000	139,269,000
The Texas and Louisiana Gulf Coastal figures shown below are included above in the totals of their respective districts.								
Texas Gulf Coast	532,500	531,500	99.8	2,756,000	393,700	74.1	5,656,000	7,347,000
Louisiana Gulf Coast	147,500	147,500	100.0	817,000	116,700	79.1	815,000	1,864,000

NOTE: In all the refining districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within Continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Third Quarter 1931	Economic Limit Third Quarter 1931	Daily Average Last Week	Daily Excess Last Week	Daily Average Since January 1	Daily Excess Since January 1†
Arkansas	63,000	60,000	38,650	—21,350	47,068	—8,932
California	525,000	487,500*	504,200	16,700	529,666	33,866
Kansas	127,000	120,000	99,750	—20,250	107,696	—5,304
Louisiana	85,000	75,000	54,350	—20,650	66,168	—7,832
Oklahoma	593,000	550,000*	425,250	—124,750	523,434	16,734
Texas	860,000	797,000*	1,177,500	380,500	852,013	140,313
Balance of U. S.	275,000	260,000	201,150	—58,850	206,918	—34,782
Total	2,528,000	2,349,500	2,500,650	151,350	2,332,963	134,063

*Allowable.
†Excess based on allowable to date.

contend, however, that it will require a hearing before the corporation commission to determine the status of this amount of Oklahoma City output.

That there is determination on the part of Oklahoma City producers can be seen from the fact that Sinclair Refining Company, which has Oklahoma's highest crude oil posting of 50 cents a barrel, was unable to get much oil over the past week. Runs of Sinclair-Texas Pipe Line Company for the past week out of Oklahoma City were around 50,000 barrels for the whole week. Most of this was oil from Sinclair Oil & Gas Company leases and storage. Previous to the shutdown of the field this company was running in excess of 50,000 barrels per day.

The drop of 12,000 barrels daily in the Greater Seminole area was due to the method of conforming to proration regulations rather than to any move on the part of producers to curtail output definitely.

The tense situation in regard to production in Oklahoma oil fields has had marked influence on gasoline prices. Mid-Continent refiners, especially those dependent wholly on

Cracked Gasoline Production

Week Ending July 25

(Barrels of 42 gallons)

District	Potential Cracking Capacity (Daily) Total	Reporting	Per Cent	Production Daily Total	Average
East Coast	261,300	236,300	90.4	595,000	85,000
Appalachian	52,300	50,100	95.8	164,000	23,500
Ind., Ill., Ky.	330,400	306,400	92.7	572,000	81,700
Okla., Kans., Mo.	237,800	219,500	92.3	424,000	60,600
Texas	450,800	436,200	96.8	866,000	123,700
Louisiana-Arkansas	112,400	112,400	100.0	213,000	30,400
Rocky Mountain	99,100	94,600	95.5	108,000	15,400
California	180,800	180,800	100.0	278,000	39,700
Total week July 25	1,724,900	1,636,300	94.9	3,220,000	460,000
Total week July 18	1,724,900	1,636,300	94.9	3,280,000	468,600
Total July 26, 1930	1,589,200	1,233,200	77.6	2,478,000	354,000
The Texas and Louisiana Gulf Coastal Figures Shown Below are included above in the totals of their respective districts.					
Texas Gulf Coast	352,400	347,400	98.6	663,000	94,700
Louisiana Gulf Coast	77,000	77,000	100.0	147,000	21,000

Imports of Petroleum

(Barrels of 42 gallons)

	Week Ended July 25		Week Ended July 18
AT ATLANTIC COAST PORTS—			
Baltimore	346,000		326,000
Boston	133,000		97,000
New York	623,000	(a)	738,000
Philadelphia	160,000		387,000
Others	214,000		127,000
Total	1,476,000		1,675,000
Daily Average	210,857		239,286
AT GULF COAST PORTS—			
Galveston District	82,000		.....
New Orleans and Baton Rouge	.....		65,000
Port Arthur and Sabine District	.....		.....
Tampa	.....		.....
Total	82,000		65,000
Daily Average	11,714		9,285
AT ALL UNITED STATES PORTS—			
Total	1,558,000		1,740,000
Daily Average	222,571		248,571
Daily Average Four Weeks Ended	238,857		221,893
Distribution of Total Imports Is As Follows:			
Crude	599,000	(a)	1,181,000
Gasoline	612,000		294,000
Fuel Oil	347,000		265,000
Total	1,558,000		1,740,000

(a)—Revised.

California Oil Receipts

(Barrels of 42 gallons)

	Week Ended July 25	Week Ended July 18
AT ATLANTIC COAST PORTS—		
Baltimore	.....	85,000
Boston	.....	.....
New York	97,000	156,000
Philadelphia	.....	.....
Others	.....	72,000
Total	97,000	313,000
Daily Average	13,857	44,714
AT GULF COAST PORTS—		
Total	.....	.....
Daily Average	.....	.....
AT ATLANTIC AND GULF COAST PORTS—		
Total	97,000	313,000
Daily Average	13,857	44,714
Daily Average Four Weeks Ended	47,357	49,464
Distribution of Total California Oil Receipts Is As Follows:		
AT ATLANTIC COAST PORTS—		
Gasoline	97,000	215,000
Fuel Oil	.....	98,000
Total	97,000	313,000

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April	543,650	109,250	723,050	185,850	39,050	47,000	111,500	95,500	527,350	3,382,200	71,465,750
May	551,950	107,400	767,200	185,950	39,200	46,650	111,250	97,500	534,150	2,451,250	75,975,950
June	556,850	103,150	828,250	170,100	36,500	44,900	108,950	97,950	520,300	2,466,950	74,009,750
July 4	591,600	103,150	830,500	163,250	35,200	43,900	108,650	99,650	506,600	2,482,500	17,377,500
July 11	632,450	101,450	850,650	159,800	33,750	43,500	107,750	92,300	523,000	2,544,650	17,812,550
July 18	521,000	99,500	864,500	158,800	33,950	41,050	101,500	87,400	525,000	2,446,800	17,127,500
July 25	482,150	97,400	952,950	156,500	33,450	40,600	105,100	94,900	523,900	2,486,950	17,408,650
August 1	425,250	99,750	1,046,800	152,500	32,550	38,650	108,550	92,600	504,200	2,500,650	17,504,550
Increase	.....	2,350	93,850	.....	.....	.....	3,450	.....	.....	13,700	95,900
Decrease	56,900	.....	.....	4,000	900	1,950	.....	2,300	19,700	.....	.....

Last Week's Daily Average Production by Districts

TEXAS	July 31	July 25
Panhandle District	54,350	55,600
North Texas	56,700	58,100
West Central Texas	26,150	25,600
West Texas	201,700	199,650
East Central Texas	52,350	52,350
East Texas	597,550	504,900
Southwest Texas	58,000	56,750
Texas Gulf Coast	130,700	133,950
Total Texas	1,177,500	1,086,900
OKLAHOMA	425,250	482,150
CALIFORNIA	504,200	523,900
KANSAS	99,750	97,400

LOUISIANA	July 31	July 25
North Louisiana	32,550	33,450
Louisiana Gulf Coast	21,800	22,550
Total Louisiana	54,350	56,000
ARKANSAS	38,650	40,600
MOUNTAIN STATES		
Wyoming	36,650	40,600
Montana	8,050	7,950
Colorado	4,200	4,200
New Mexico	43,700	42,150
Total Mountain States	92,600	94,900
EASTERN STATES	108,550	105,100
TOTAL UNITED STATES	2,500,650	2,486,950

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	2	0	0	0	0	0	2	0	0	0
California	10	6	7	4	0	0	3	2	40,975	5,350
Illinois	3	0	0	0	0	0	3	0	0	0
Indiana	4	0	0	0	2	0	2	0	0	0
Kansas	9	10	4	6	3	0	2	4	445	6,595
Kentucky	2	7	1	3	1	3	0	1	225	287
Louisiana	6	3	0	2	1	0	5	1	0	557
Michigan	1	0	0	0	1	0	0	0	0	0
Mississippi	3	2	0	0	3	0	0	2	0	0
New York	0	1	0	1	0	0	0	0	0	3
Ohio	13	21	4	5	6	12	3	4	62	27
Oklahoma	13	14	5	9	3	1	5	4	43,630	122,535
Pennsylvania	4	33	1	11	3	15	0	7	15	30
Texas	110	135	102	103	1	6	7	26	729,600	751,690
West Virginia	5	5	1	0	4	4	0	1	8	0
Total	185	237	125	144	28	41	32	52	814,960	887,074
Increase this week		52		19		13		20		72,114
Decrease this week										

Comparison of Permits Granted for New Wells

State—	Week Ending July 31	Previous week	This week 1930	Total this month	This month 1930	Total this year	Total this date last year	1930 year total
Arkansas	0	0	3	0	6	23	63	108
California	4	2	18	15	101	239	489	922
Louisiana	5	2	19	20	87	199	647	948
Kansas	8	4	17	36	93	283	644	944
Oklahoma	4	9	30	44	216	551	2,010	2,830
Texas	105	144	196	532	605	3,484	4,915	7,052
Total	126	161	283	647	1,108	4,779	8,768	12,804

MARKET SECTION

Oklahoma crude oil, have steadily raised quotations until U. S. motor gasoline is now quoted at three cents and some at 3¼ cents. This is an increase of one cent a gallon within a month. Likewise manufacturers of natural gasoline are raising quotations. Some manufacturers were refusing to quote on naturals this week. Any shutdown of oil fields, either voluntary or as a result of action by the governor, will bring rapid decline in natural gasoline output.

Sinclair to Store 2,500,000 Barrels Oil at Mexia Farms

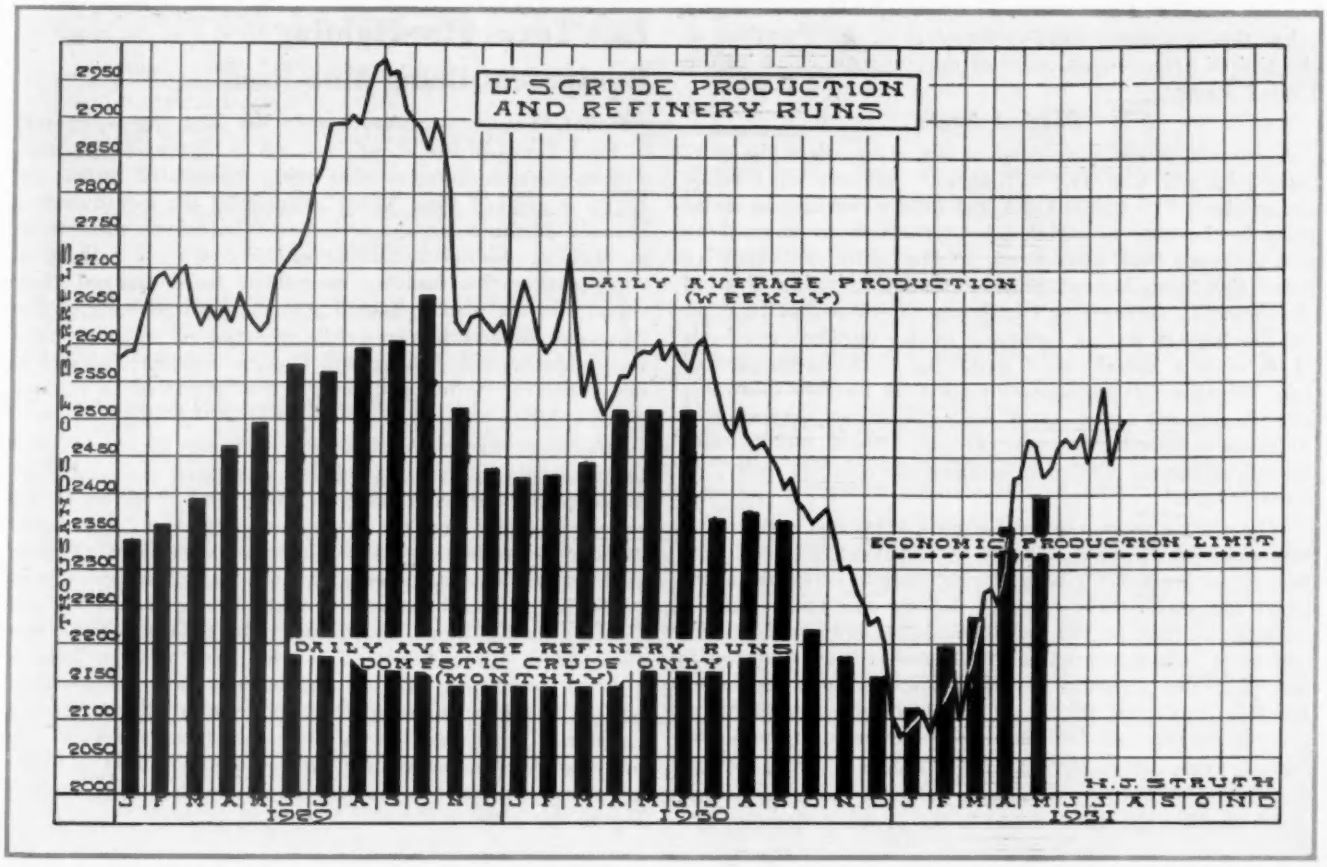
Mexia, Texas.—Storing of approximately 2,500,000 barrels of crude from East Texas by Sinclair Refining Company in the Mexia area will begin early this week as result of the company having purchased Pure Oil Company's two tank farms, consisting of a total of 47, 55,000-barrel steel tanks. These tanks were erected in 1921 and 1922 in connection with the development of the Mexia field, and are in good condition, except for the roofs on some of the tanks, which will be replaced immediately by the new owner. Eight of the tanks are on tank farm No. 1 and the remaining 39 are on No. 2 tank farm. Pure Oil Company has had no use for these tanks since the passing of the flush production period of the Mexia and Wortham fields, and has been waiting for an opportunity to dispose of same.

Purchase of these storage facilities by Sinclair Refining Company will enable Sinclair-Texas Pipe Line Company to maintain its current heavy oil movement from East Texas to Colonels station, near Mexia, where connection is made with Pure Oil Pipe Line Company of Texas, while awaiting completion by Prairie Pipe Line Company of new trunk line capacity from Mexia towards the Mid-Continent. Prairie Pipe Line Company now has five welding crews engaged in laying 157 miles of eight-inch line, parallel to an old eight-inch carrier, from Mexia to Hensley station, located in Jack County, North Texas. This unit is scheduled to be completed by August 25, and will increase the capacity from 22,500 to 45,000 barrels daily. The company has 65,000 barrels daily capacity to the north of Hensley station into Oklahoma.

Sinclair-Texas Pipe Line Company was delivering about 61,000 barrels of East Texas crude daily to Colonels station late last week, with a portion of the oil moving north via Prairie Pipe Line Company's system, and the remainder over Pure Oil Pipe Line Company of Texas' looped eight-inch carrier to Huffman station, where connection is made with Sinclair-Texas Pipe Line Company's new eight-inch extension line from Sinco, near Houston. Pure Oil Pipe Line Company of Texas will handle East Texas crude deliveries from Colonels station to the Mexia tank farms for Sinclair interests.

Bartlesville, Okla.—Second quarter report of Phillips Petroleum Company showed a net deficit of $2,054,801 for the period ending June 30, as compared with net profit of $3,033,555 for the corresponding period of 1930.

For the first half of 1931 net operating profit of $5,300,876 was shown but reserves for depreciation, depletion and retirements were $7,975,029 for the period, leaving net loss of $2,674,153 for the period.



MARKET SECTION

Murray Puts Oklahoma Prorated Wells Under Martial Law

TULSA.—Oil wells in the prorated fields of Oklahoma went under the control of martial law at 5:30 p. m. Tuesday, August 4, upon the executive order of Governor William H. Murray. The order was the fulfillment of an ultimatum issued eight days previous to the effect that the flush fields of the state would be closed down last Saturday unless the posted price of crude oil reached as high as one dollar a barrel by that time.

While the order was issued late in the afternoon, troops entered the Oklahoma City field in mid-afternoon and proceeded first to the properties of Champlin Refining Company, which had been operating under federal injunction. Hearing to make the temporary injunction permanent was held at Guthrie Monday and the judges have not yet given their decision. Next Sinclair Oil & Gas Company's properties were shut in, followed by wells of H. F. Wilcox Oil & Gas Company and then those of Oils, Inc.

The executive order applies to 3106 oil wells and places the 50 feet surrounding each of these wells under control of the military authorities. There are 27 oil fields included in the order. Stripper wells, defined in the order as those making 25 barrels or less per day, are exempt from the shut-down decrees.

The order directs the adjutant general to place men in control of these fields and hold them against all authority other than a countermanding mandate of the President of the United States or an order of the Supreme Court of the United States.

Political Angle

A political angle was found in the order when the governor charged that H. F. Sinclair, chairman of Sinclair Consolidated Oil Corporation had held a meeting in Tulsa early in the year at which the proposition of impeaching the governor was considered. Along with the executive order the State School Land Commission today directed the Attorney General of Oklahoma to file action to compel Sinclair Oil & Gas Company to pay royalty on a basis of 40 cents a barrel for oil produced in the latter part of July. Sinclair Oil & Gas Company took its July allowable and then closed down leases while Oklahoma City oil was 20 cents a barrel. Price increases followed rapidly with Sinclair Refining Company posting the highest price, 50 cents a barrel.

When the governor gave his ultimatum last week legal executives of the oil companies in Oklahoma accepted it as sincere and immediately began laying plans to defeat the order. Legal decisions already compiled indicate that the holders of working interests in the fields now shut down will proceed into some federal district court. They have two decisions to the effect that military officers and soldiers are responsible for their acts as if they were private citizens, regardless of what orders they may be following or the source of the orders.

One of these was written by Judge Robert L. Williams, long time friend of Murray, and now a judge on the federal bench in Oklahoma. The decision was in the Supreme Court of Oklahoma in the action of a citizen against the Adjutant General of Oklahoma. One part of it reads:

"A member or officer of the state militia, as a soldier in active service, is not relieved from civil liability for his acts while so engaged on the ground that he acted in obedience to an order received from the governor as commander-in-chief through the regular military channels."

A Kentucky case involving acts of the military in a period of martial law carries this opinion from the court: "Any military order, whether it be given by the governor of the state or an officer of the militia or a civil officer of city or county, that attempts to invest either officer or private with authority in excess of that which may be exercised by peace officers of the state is unreasonable and unlawful; and, if it is obeyed, the officer or private giving obedience subjects himself to such punishment and liability as the penal and civil laws of the state might inflict against a private individual guilty of similar transgressions of the law or the rights of the citizens."

Undoubtedly the Murray order will come before the Supreme Court of the United States in October. Pending the opening of that court term there may be a contest between the edicts of some federal district court and Governor of Oklahoma.

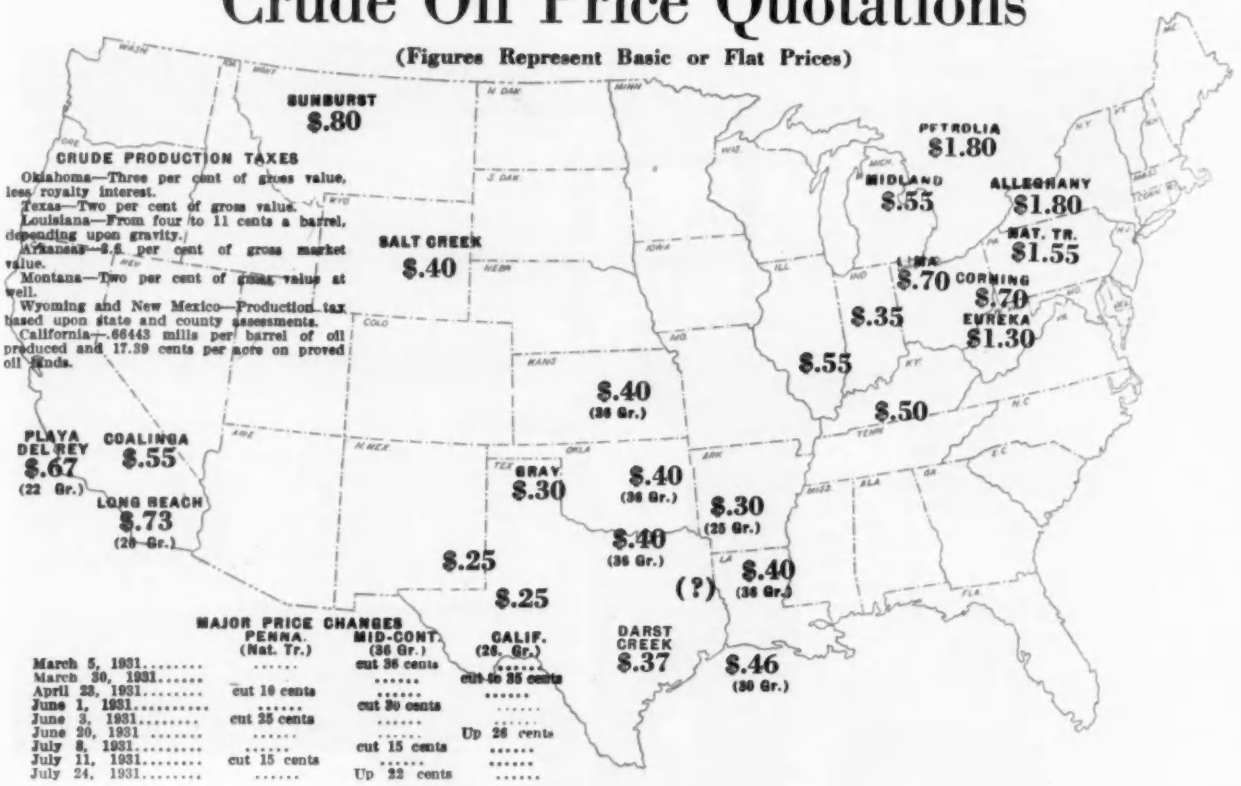
East Texas Fire-Fighting Equipment Being Mobilized

Dallas, Texas.—Mobilization of fire fighting equipment in East Texas in the event of a fire of serious proportions will be possible under a plan being formulated by the recently organized East Texas chapter of the Southwestern District of the American Petroleum Institute's division of production. Sufficient companies and operators in the field with private fire fighting equipment have pledged their support to the plan to assure a well organized body of fire fighters. In addition to being prepared for combatting a conflagration, the chapter will become actively engaged in fire preventive work, and take immediate steps to remove the many fire hazards that now exist in the field.

Successful fire preventive and fighting measures used by California operators are being incorporated in the East Texas plan. Carl A. Young, secretary, and H. N. Blakeslee, safety engineer for the American Petroleum Institute's division of production, have cooperated with R. W. Taylor, chairman of the East Texas chapter, and other officials in perfecting an organization to engage in fire prevention and fighting work. Plans are to divide the field into three fire zones, with sub-committees in each; and also to have a general committee. All fire fighting equipment in the field will be listed in literature to be distributed shortly by the chapter. Owners of fire fighting equipment are to be reimbursed for chemicals or other commodities used in fighting fires on leases of other companies by the latter, according to the plan.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.
Texas—Two per cent of gross value.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.5 per cent of gross market value.
Montana—Two per cent of gross value at well.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.)
March 5, 1931	.....	cut 36 cents	.....
March 30, 1931	.....	.....	cut to 35 cents
April 23, 1931	cut 10 cents	.....	.....
June 1, 1931	.....	cut 20 cents	.....
June 3, 1931	cut 25 cents	.....	.....
June 20, 1931	.....	.....	Up 26 cents
July 8, 1931	.....	cut 15 cents	.....
July 11, 1931	cut 15 cents	.....	.....
July 24, 1931	.....	Up 22 cents	.....

Official Postings and Differentials

(Revised to August 4, 1931

California: (Effective June 19, 1931).

Signal Hill, Seal Beach and Alamitos Heights: 14 to 22.9 gravity 65 cents; 23 gravity, 67 cents with differential of two cents for each degree upward. Top price for Signal Hill, 30 gravity, 81 cents; top price Seal Beach and Alamitos Heights, 27 gravity, 75 cents.

Huntington Beach: 14 to 21 gravity, 65 cents; 22 gravity, 66 cents with differential of two cents for each degree upward. Top price, 27 gravity, 76 cents.

Inglewood: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity 76 cents.

Playa Del Rey: 19 to 20.9 gravity 65 cents with differential of one cent for each degree upward. Top price, 25 gravity, 70 cents.

Olinda and Brea Canyon: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents; 22 gravity 68 cents with differential of two cents for each degree upward. Top price, 28 gravity, 80 cents.

Coyote Hills: 14 to 22.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents with differential of two cents for each degree upward. Top price, 28 gravity, 79 cents.

Santa Fe Springs: 24 to 26.9 gravity 65 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 73 cents; 30 gravity 75 cents; 31 gravity 78 cents; 32 gravity 80 cents; 33 gravity 83 cents; 34 gravity 85 cents; 35 gravity and above 87 cents.

Whittier, La Habra and Montebello; 65 cents a barrel.

Torrance: 14 to 21.9 gravity 65 cents with differential of one cent for each degree to 25 gravity and two-cent differential for 25 gravity. Top price, 25 gravity, 70 cents.

Richfield: 14 to 20.9 gravity 65 cents; 21 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity, 74 cents.

Elwood: 33 gravity 79 cents; 34 gravity 81 cents with differential of three cents for each degree upward. Top price, 36 gravity, 87 cents.

Newhall, McKittrick and Kern River: 55 cents a barrel.

Midway-Sunset, Elk Hills and Buena Vista Hills: 14 to 21.9 gravity 55 cents; 22 gravity 56 cents; 23 gravity 58 cents; 24 gravity 61 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 74 cents; 30 gravity 76 cents.

Lost Hills: 14 to 20.9 gravity 55 cents; 21 gravity 57 cents; 22 gravity 59 cents; 23 gravity 60 cents; 24 gravity 62 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 67 cents; 28 gravity 69 cents; 29 gravity 71 cents; 30 gravity 72 cents.

Coalinga: 14 to 24.9 gravity 55 cents; 25 gravity 57 cents.

Wheeler Ridge: 55 cents a barrel.

Athens, Dominguez and Rosecrans: 24 to 24.9 gravity 69 cents with differential of two cents for each degree upward. Top price, 34 gravity, 89 cents a barrel.

Oklahoma-Kansas-North Texas: (Effective July 24, 1931)

Flat Prices: Below 36 gravity 35 cents a barrel; 36 gravity and above 40 cents a barrel.

Gravity Scale Prices: Below 29 gravity 30 cents a barrel with differential of 1 cent for each degree beginning with 29 and ending with 40 gravity and above. Top price 42 cents a barrel.

Texas Panhandle: (Effective July 24, 1931).

Gray County 30 cents flat.

Carson and Hutchinson County oil 27 cents flat.

West Texas: (Effective July 24, 1931)

Crane, Upton, Crockett, Ector, Howard, Glasscock, Pecos and Winkler Counties, Texas, and **Lea County, New Mexico,** 25 cents flat.

Southwest Texas: (Effective July 24, 1931)

Refugio heavy oil 44 cents a barrel.

Refugio light oil—same as Gulf Coast (see below).

Gulf Coast: (Effective July 24, 1931)

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity 40 cents, with differential of 1 cent for each degree beginning with 25 gravity and ending with 35 and above. Top price, 51 cents a barrel.

Mirando: 44 cents; **Salt Flat:** 37 cents; **Darst Creek:** 37 cents; **Pettus:** 50 cents; **Markham:** 25 cents.

North Louisiana and Arkansas: (Effective July 24, 1931)

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Crichton, De-Soto, El Dorado, Cotton Valley, Sarepta, Carterville: Below 29 gravity 30 cents with differential of 1 cent for each degree beginning with 29 gravity and ending with 40 and above. Top price 42 cents a barrel.

Smackover: 30 cents; **Urbana:** 20 cents.

Rocky Mountain States: (Effective July 25, 1931)

Salt Creek: Same as Mid-Continent—below 36 gravity 35 cents, 36 gravity and above 40 cents.

Elk Basin and Grass Creek: 65 cents; **Big Muddy:** 45 cents; **Lance Creek:** 80 cents; **Rock Creek:** 50 cents; **Sunburst:** 80 cents; **Mule Creek:** $1.05; **Rex Lake:** 95 cents; **Osage:** 35 cents; **Cat Creek:** $1.10; **Pondera:** $1.30; **Hogback, New Mexico:** $1.25.

Eastern States: (Effective July 25, 1931)

Lima: 70 cents; **Indiana:** 35 cents; **Illinois:** 55 cents; **Princeton:** 55 cents; **Wooster:** 73 cents; **Western Kentucky:** 50 cents.

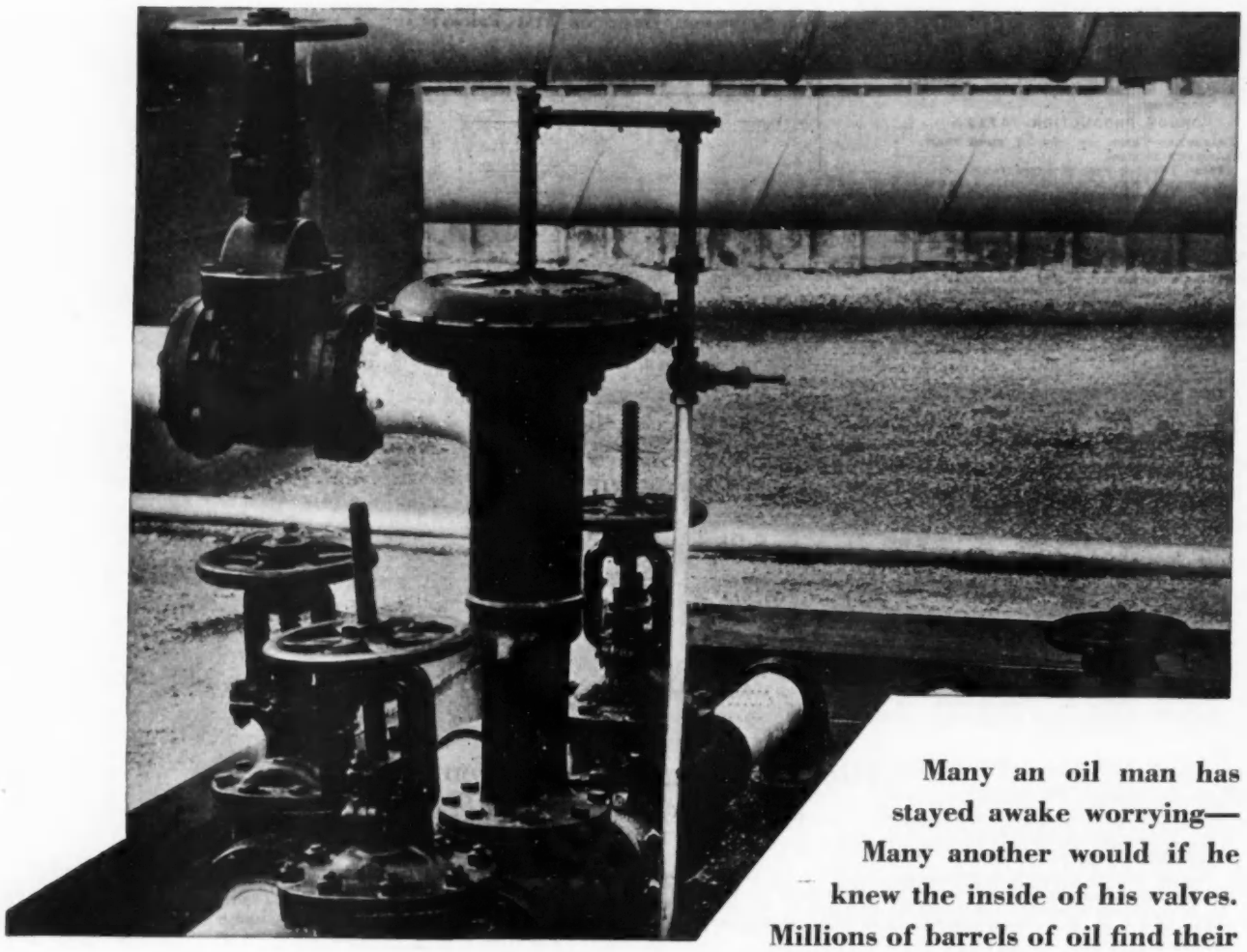
Pennsylvania: (Effective July 29, 1931). **Bradford District:** $1.80; **National Transit oil:** $1.55; **Southwest Pennsylvania Pipe Line oil:** $1.40; **Eureka Pipe Line oil:** $1.30; **Buckeye Pipe Line oil:** $1.15; **Corning crude:** 70 cents.

Michigan: (Effective July 24, 1931). **Midland:** 55 cents a barrel. **Muskegon:** Same posting as Mid-Continent: 35 cents to 40 cents a barrel. (Effective July 24, 1931).

Canada: (Effective July 24)

Petrolia: $1.75; **Oil Springs:** $1.82.

DARLING GATE VALVES . . . .



Many an oil man has stayed awake worrying—
Many another would if he knew the inside of his valves.
Millions of barrels of oil find their way from the oil fields to the refineries and many millions of cubic feet of gas are distributed to distant points through pipe lines controlled by Darling Gate Valves.

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(*Continued from page* 13)

The new commission is, apparently, a dead issue. There is general opposition to the creation of further administrative bureaus in the state government, and many members of the oil industry seem to be more inclined to take their chances with the present commission, with whose members they are familiar, than with a new appointive commission whose policies are unknown. However, the continued quarreling of the commissioners among themselves has caused considerable comment among the legislators. In the Senate it has gone so far as to cause one member to introduce a resolution to request the resignation of the members of the commission unless they settle their difficulties and get to work.

Permit Ratable Takings

The chief problem, however, is to write a law which will permit ratable takings, as required under the common purchaser act, and to prevent proration to market outlet, or market demand. There is a faction in both the House and the Senate which is determined not to pass any law which will allow price-fixing, or even become a factor in price. At the same time, this group wishes to control oil-gas ratios and prevent physical waste.

R. E. Hardwicke, representing the oil emergency committee, and J. E. Kilgore, representing the North Texas Oil and Gas Association, spent several hours on Saturday, August 1, presenting to the Senate committee on state affairs their views as to the advisability of control to the market demand, which they advocate. They insisted that any law which results in the prevention of physical waste will be a factor in the price, and that to really prevent this waste it is necessary to limit the production to that which is required for working stocks and immediate consumption. Every saving effected, they pointed out, is an economic gain to the state as a whole, even though it is only physical waste that is prevented. In fact, according to Mr. Hardwicke, physical and economic waste are so closely entwined, that the control of one is bound to affect the other.

Mr. Hardwicke urged that the law definitely permit proration to market demand, although this might result in an effect on the price, as the law would then be clear and concise and there would be only one interpretation possible, and future arguments over the legality of proration would be eliminated.

Representative T. H. McGregor, heading the faction opposed to proration in the House, made a fiery speech on Saturday, condemning the Wagstaff-Woodward bill from beginning to end, as an effort to allow government price-fixing. He has a strong minority following in both houses.

Harry Sinclair, invited to appear before the legislature Friday, July 31, sent his regrets and a full statement of his views on the proposed oil legislation. He condemned the proposal to set up a new commission, to allow proration, or to permit the unitization of various fields of the state. He insisted that there was too much government control in the industry at the present time, and that if it were left alone the oil business would recover much more quickly. He pointed out that if the present statutes on physical waste and the common purchaser act were enforced, that Texas would have sufficient laws to control the oil industry as far as this should be done. However, if there is to be control, Mr. Sinclair urged that drilling be stopped. This would automatically reduce the production of the state within a short time, and new wells could be permitted as the demand appeared for the oil they will produce.

Ben C. Belt, chief geologist for Gulf Production Company, in his statement to the Senate, disagreed materially with E. V. Foran, technical advisor to the central proration committee, as to the results effected on ultimate production by the uneven withdrawals in the East Texas field. Mr. Belt insisted that the Woodbine sand, the producing horizon in East Texas, was not one sand, but several sands separated by shale breaks, which would prevent the migration of oil from the western edge of the field through all the sands. He cited numerous examples of wells in the field which had drilled through the Austin chalk into the pay, through the pay into shale, and through several feet of shale into a second pay horizon. He insisted that none of the oil will be trapped off in these sands, as Mr. Foran argued, but that the ultimate recovery of the field will be the same if operation of the wells is continued. He cited Winkler County as an example, and insisted that all the oil will be recovered in this field that would have been recovered had the field been operated as a unit from its inception, as was done in Yates. He stated that the water in both East Texas and Winkler was a natural factor in the production of oil, and that it was required to wash all the oil from the sand and bring it to the bottom of the hole, where it could be pumped to the surface.

The house committee continued the debate Tuesday morning on the Wagstaff-Woodward bill. Effort of Bailey Hardy to have the control of oil-gas ratios by the commission stricken from the bill were fruitless. An amendment to the bill by Representative Walker of Wilbarger County, permits the commission to prorate the production in any given field at their full capacity results in underground or aboveground waste. However, it does not permit prorating the entire state as a whole or limiting the production to market demand. It requires ratable takings by the pipe line companies who operate competitive leases in a given field, and requires common purchasers to reduce their takings from offset acreage to an equivalent of the production of the offset, unless the common carrier is willing to accept enough oil from the offset lease to equalize the production between the two leases.

Proposed Texas Pipe Line Law Approved in Conference

Austin, Texas.—The basis for highly important legislation controlling the pipe lines of Texas was agreed to Tuesday, August 4, in a conference between the representatives of the principal pipe line companies and Senator Tom Pollard, who had a far reaching pipe line bill pending. The agreed measure follows the general provisions of the common purchaser act, and it was unanimously approved by the senate committee on state affairs.

It empowers the railroad commission to fix pipe line rates and it also requires pipe lines to extend their gathering lines to unconnected wells, under regulations to be prescribed by the commission. It provides for severe punishment for violation of the commission's orders, and once sustained by the court, it authorizes the forfeiture of charters of home corporations and injunctions against foreign concerns operating in Texas.

Kinleys Get Contract to Subdue Famed Moreni Well

Tulsa.—The Moreni burning well in Roumania will at last come under the fire fighting efforts of M. M. Kinley of Tulsa. Kinley has sent word wack to his office in Tulsa that the Roumanian government has entered into a contract to permit him to try his method of subduing this well.

He was in that country about a year ago but officials of the foreign government did not then give consent for him to attempt the work. He went to Vienna as a representative of the Tulsa Rotary Club for the international convention. Later he visited Roumania for the purpose of trying another time to come to an agreement with Roumanian officials.

Kinley and his brother, Floyd, were successful in extinguishing the fire of the Sinclair well near Gladewater, in East Texas. M. M. Kinley suffered a broken ankle in that work but this has healed to permit unhampered work on the Moreni well.

Socony-Vacuum Merger Is Approved by Stockholders

New York City.—Stockholders of Vacuum Oil Company and Standard Oil Company of New York, respectively, voted approval of the merger of the two companies into Socony-Vacuum Corporation, almost unanimously. Opposition was inconsequential, amounting to but 1262 shares.

Other propositions voted upon and approved by stockholders of Standard Oil Company of New York included the change of name to Socony-Vacuum Corporation, an increase in the capital stock of authorized $25 par value from 18,000,000 to 40,000,000 shares, and several amendments to the by-laws incidental to the merger.

In his address to stockholders, C. F. Meyer, former president of Standard Oil Company of New York, traced the development of the merger from its conception toward the end of 1928, to its execution. Final agreement on the basis of stock exchange, was accomplished by a committee consisting of high officers of four New York banks, together with the then president of the New York Stock Exchange.

The basis of exchange originally arrived at was three for one; however, the merger was voted on an altered basis of 2½ to one, due to changed stock values.

In the first meeting of the board of directors, H. L. Pratt, formerly chairman of the board of Standard Oil Company of New York, was named chairman of the new board; Herbert Baker, formerly chairman of the board of Vacuum Oil Company, was named vice-chairman; while C. F. Meyer was made chairman of the executive committee. Charles E. Arnott, formerly president of Vacuum Oil Company, is the new president; and C. E. Bedford and E. R. Brown, of Socony and Vacuum, respectively, were made new vice-presidents. Directors include: Frederic Ewing, F. S. Fales, W. B. Walker, C. L. Jones, H. F. Sheets and G. P. Whaley.

Denver, Colo.—Continental Oil Company's faith in the newly discovered Greasewood dome territory, in Weld County, is attested by its recent completion of a survey for pipe line from Fort Morgan to Denver. The company is spudding in two tests on its holdings in the district, and has applied for a certificate of convenience and necessity to lay the pipe line.

GREEN-HEAD BIT

An exceptional easy running 6 way bit with 3 pilot blades and 3 extra long reaming blades. Runs smoothly and is easy on drill pipe.

The Green Head Bit has proved successful in all operations in the Mid-Continent Area.

Properly located and correct size of circulation holes keep all blades free of the sticky formations, eliminates spudding operations and is used successfully in soft or hard formations.

For further information write us, Box 177, Capitol Hill Station, Oklahoma City.

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RENTAL SERVICE

Manufactured and Serviced by

Snetcher & Pittman

Oklahoma City, Okla. *Joinerville, Texas*

The Coupling, *too, is important*

Casing, Drill Pipe, Tubing, Line Pipe—whatever the service, in the oil and gas fields or elsewhere, the couplings need to be structurally as good as the pipe. For a line can be no stronger than its couplings, and no part of it is subjected to more severe strains than they, both in the process of installation and in service.

Accurate in dimensions, of high tensile properties, resistant to deformation and having strong, uniform threads, NATIONAL Seamless Couplings are everyway fortified to match the well proved service and durability of NATIONAL Pipe.

All sizes are available. Local supply houses carry them in stock for prompt shipment.

NATIONAL TUBE COMPANY · PITTSBURGH, PA.

Subsidiary of United States Steel Corporation

NATIONAL *Seamless Steel* COUPLINGS

Kinleys Get Contract to Subdue Famed Moreni Well

Tulsa.—The Moreni burning well in Roumania will at last come under the fire fighting efforts of M. M. Kinley of Tulsa. Kinley has sent word wack to his office in Tulsa that the Roumanian government has entered into a contract to permit him to try his method of subduing this well.

He was in that country about a year ago but officials of the foreign government did not then give consent for him to attempt the work. He went to Vienna as a representative of the Tulsa Rotary Club for the international convention. Later he visited Roumania for the purpose of trying another time to come to an agreement with Roumanian officials.

Kinley and his brother, Floyd, were successful in extinguishing the fire of the Sinclair well near Gladewater, in East Texas. M. M. Kinley suffered a broken ankle in that work but this has healed to permit unhampered work on the Moreni well.

Socony-Vacuum Merger Is Approved by Stockholders

New York City.—Stockholders of Vacuum Oil Company and Standard Oil Company of New York, respectively, voted approval of the merger of the two companies into Socony-Vacuum Corporation, almost unanimously. Opposition was inconsequential, amounting to but 1262 shares.

Other propositions voted upon and approved by stockholders of Standard Oil Company of New York included the change of name to Socony-Vacuum Corporation, an increase in the capital stock of authorized $25 par value from 18,000,000 to 40,000,000 shares, and several amendments to the by-laws incidental to the merger.

In his address to stockholders, C. F. Meyer, former president of Standard Oil Company of New York, traced the development of the merger from its conception toward the end of 1928, to its execution. Final agreement on the basis of stock exchange, was accomplished by a committee consisting of high officers of four New York banks, together with the then president of the New York Stock Exchange.

The basis of exchange originally arrived at was three for one; however, the merger was voted on an altered basis of 2½ to one, due to changed stock values.

In the first meeting of the board of directors, H. L. Pratt, formerly chairman of the board of Standard Oil Company of New York, was named chairman of the new board; Herbert Baker, formerly chairman of the board of Vacuum Oil Company, was named vice-chairman; while C. F. Meyer was made chairman of the executive committee. Charles E. Arnott, formerly president of Vacuum Oil Company, is the new president; and C. E. Bedford and E. R. Brown, of Socony and Vacuum, respectively, were made new vice-presidents. Directors include: Frederic Ewing, F. S. Fales, W. B. Walker, C. L. Jones, H. F. Sheets and G. P. Whaley.

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NATIONAL TUBE COMPANY · PITTSBURGH, PA.

Subsidiary of United States Steel Corporation

NATIONAL *Seamless Steel* COUPLINGS

Personal Mention—Men You Know

▼ ▼ ▼

WILLIAM CREASER THOMAS, manager of development and production departments, southwest division, Vacuum Oil Company, is one of those practical engineers in the oil industry whose knowledge, impressed by hard knocks of experience's school, has developed in him a gift for successfully coping with problems arising within those activities of Vacuum Oil Company falling under his supervision.

W. C. THOMAS

Heredity injected into his blood a love of oilfield work. His father dallied with oil in old Pennsylvania in the nineteenth century, then came to Spindletop in 1901, bringing "Bill" with him and permitting the son to learn the song of pipe tong, to interpret through sensitive touch on the brake, meanings of oscillations in the grawl of a madly driven boom rotary.

In 1902, when 14 years old, Bill Thomas' name was carried on the payroll of Brice and Bradley as an extra driller. From then til 1905 he served in various capacities, mostly as driller, in South Texas and Louisiana—at one time working under Roy Reider, then a gang pusher. Coalinga field, in California, enrolled Bill Thomas as rotary driller for Kern River Trading and Oil Company from 1911 to 1912. In the latter year he returned to the Gulf Coast to supervise the drilling of the discovery well of Goose Creek for Gulf Production Company.

Simms Oil Company obtained his services as production manager in 1919. Two years later he went with Humble Oil & Refining Company as assistant to the vice president in charge of production. In 1925 Bill Thomas came to Vacuum Oil Company as general manager of production and drilling in the Gulf Coast. Three years later he was promoted to assistant general manager of the company's southwest division. His teachers have included such men as Professor Cummins, T. P. Lee, C. P. Clayton, H. A. Melat, Bill Keck and J. F. Fisher.

R. R. HAWKINS, district petroleum engineer for The Texas Company, left Tulsa August 1 for a vacation tour through Colorado and Wyoming. Mr. Hawkins hopes to return about the middle of the month with photographic evidence of his prowess as a mountain trout fisherman.

R. D. RISSER, field construction engineer for Shell Petroleum Corporation and D. B. Dow, Indian Territory Illuminating Oil Company, have been placed on the committee of disposal of production wastes of the American Petroleum Institute's division of production.

CHARLES MAULE, land man for Stanolind Oil & Gas Company, is being transferred from Tyler, Texas, to Muskegon, Michigan.

TRUMAN P. GAYLOR, 60, vice president of Westinghouse Electric and Manufacturing Company, East Pittsburgh, died suddenly, July 5, in Shelby, Michigan, his boyhood home, where he had been visiting his mother.

He attended the Allen Academy of Chicago; the University of Michigan, from which he was graduated with the degree of electrical engineer; and Armour Institute of Technology from which he secured a degree in 1895.

He was appointed district manager of the Westinghouse Company's Chicago office in 1902, the position he occupied until he was made acting vice-president in August, 1914. He was elected vice-president in April, 1929.

JIM O'DONNELL, well known California wildcatter, is planning a test near Everett, Washington. Seattle capital is also interested in the project.

C. W. HOBSON and Harold Hobson, well known English electrical engineers, recently visited California fields to make a study of the adaptation of electrical power to oil well drilling.

E. J. NICKLOS, vice-president in charge of production, L. P. Carpenter, general superintendent of the Oklahoma-Kansas division, G. H. McIntyre, superintendent of the Texas-New Mexico division, and R. S. Shannon, superintendent of the Rocky Mountain division, for Continental Oil Company, are inspecting the company's holdings in California.

FRITH C. OWENS, formerly district geologist for Humble Oil & Refining Company at McAllen, Texas, has been transferred to that company's Laredo office.

REX G. HAMAKER, vice president, Reed Roller Bit Company, Houston, has recently been appointed general sales manager. He has been associated with Reed Roller Bit Company since 1928, when he resigned as chief engineer for Humble Oil & Refining Company. Hamaker came to Texas in 1919, joining the Humble Oil & Refining Company's engineering department as district engineer at Ranger. In 1920 he was transferred to Houston as chief engineer. He was graduated in engineering at Stanford University in 1916, and served in the engineering and production departments of Standard Oil Company of California the three following years. Prior to his appointment as general sales manager for Reed Roller Bit Company, he was vice-president and works manager.

REX G. HAMAKER

FRANK W. DeWOLF of Houston, vice-president and general manager of The Louisiana Land & Exploration Company, has resigned that position, effective September 1, having accepted appointment as head of the departments of geology and geography at the University of Illinois, following retirement of Dr. W. S. Bayley. He will be succeeded as active head of Louisiana Land & Exploration Company by Paul T. Seashore, formerly field superintendent and assistant manager.

FRANK W. DEWOLF

Mr. DeWolf has been active in the oil business in Texas for the past eight years, and he previously did extensive geological work for the federal government and for the state of Illinois, serving the latter as state geologist immediately preceding his entry into commercial work.

Born in western Iowa in 1881, and educated in the high schools of Des Moines and Chicago, Mr. DeWolf was graduated from the University of Chicago, where he also did post-graduate work in geology. He taught at that university and one of the affiliated academies in 1903-1904, and in the summer of 1904 he entered the United States Geological Survey, and worked three seasons in the coal and oil fields of Pennsylvania and West Virginia.

In 1907 he did similar government work in Illinois, and became assistant state geologist of that state in 1908 in charge of oil and coal investigations. Following resignation of Dr. H. Foster Bain, director of the Illinois state geological survey, Mr. DeWolf was appointed to that position and he continued as state geologist until 1923. In 1917, during the World War, he was on leave from Illinois and served as assistant director of the United States Bureau of Mines, engaged exclusively with war problems.

In March, 1923, Mr. DeWolf entered commercial work as chief geologist of the Humphreys interests at Dallas, Texas. After directing extensive geophysical work of the Humphreys Corporation along the Gulf Coast, Mr. DeWolf in 1927 became associated with the Louisiana Land & Exploration Company, and was placed in charge of operations of that company as vice-president and general manager. Geophysical work which the company undertook immediately afterward resulted within a short time in discovery of 10 new salt domes along the Louisiana Gulf Coast.

DR. A. WADE SCHWITALLA resigned, June 20, as general manager of the crude oil department of Shell Petroleum Corporation. He tendered his resignation May 26, 1931, to become effective at the convenience of the company.

He had been with the Shell organization for eight years. At first he was manager of sales and distribution for Oklahoma and Kansas. For six years he had been in charge of crude oil purchases with district offices in Tulsa, Dallas and Houston.

His home is the country estate Willowhurst, on the Broken Arrow road near Tulsa.

R. T. ALLEN, assistant to Paul Grimm, umpire for the greater part of California, will continue as assistant umpire under Neal Anderson, who becomes umpire for the entire state on August 15.

JAMES H. ASKEW, independent oil operator of North Louisiana and East Texas, was badly injured August 1 while alighting from a passenger train on the outskirts of Shreveport. Mr. Askew was thrown under the train and part of his left foot and several fingers of his left hand were so badly crushed they had to be amputated. He is expected to recover.

JUDGE R. L. BATTS, chairman of the board of regents of the University of Texas and one of the most widely recognized authorities on legal matters pertaining to the oil industry, addressed the San Antonio Geological Society Monday night at the San Antonio Petroleum club in the Alamo National building.

DONALD G. COOMBS has been appointed manager of the operating department of the Shell Petroleum Corportion with headquarters in St. Louis. He has transferred his activities from New York City, where he was associated with Shell Eastern, Inc., in a similar capacity. Coombs joined Shell Oil Company, another of the Shell group companies, in California in 1921. He served in the Los Angeles and Seattle offices and later was sent to Honolulu to supervise the construction of a terminal. In 1929 he went to Shell Eastern as operations manager. He was born in Burlington, Wisconsin, and attended University of Washington.

DONALD G. COOMBS

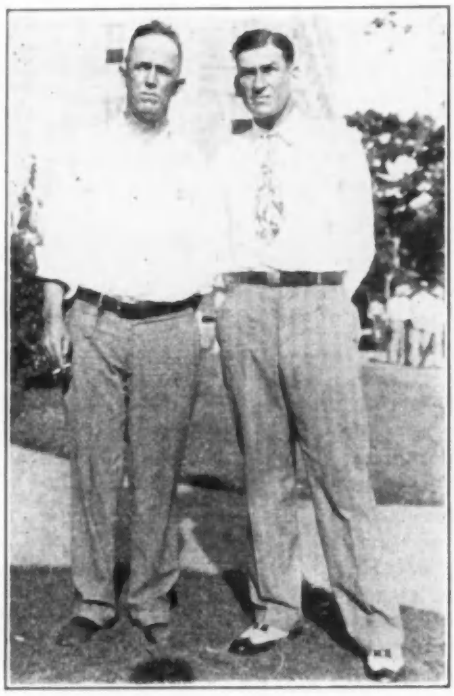
J. ELMER THOMAS sailed for Europe on August 1 aboard the Ile de France.

NEAL ANDERSON, formerly umpire for Long Beach and other Los Angeles basin fields, has been made umpire for the state, consolidating the two offices formerly held by himself and H. P. Grimm, formerly umpire for most of the state. All records compiled by Grimm, have been turned over to the general committee on curtailment. The consolidation will greatly reduce expenses.

CHARLES WILKENS, 25, an oil field worker, sustained two broken ribs, a fractured shoulder and sustained cuts about the face and chin recently when a jimpole on a derrick in the Carolina-Texas field of Webb County on which he was working broke and pinned him underneath. He was taken to a Laredo hospital for treatment.

LATEN STANBERRY, who has been with the Texas Railroad Commission since the organization of the oil and gas division in 1919, has been named acting head of the gas utilities division. Mr. Stanberry has been in this department for several years, and has been in charge since the resignation of Clifford Stone early this year.

"SHOTS FROM THE HOT SPOT"



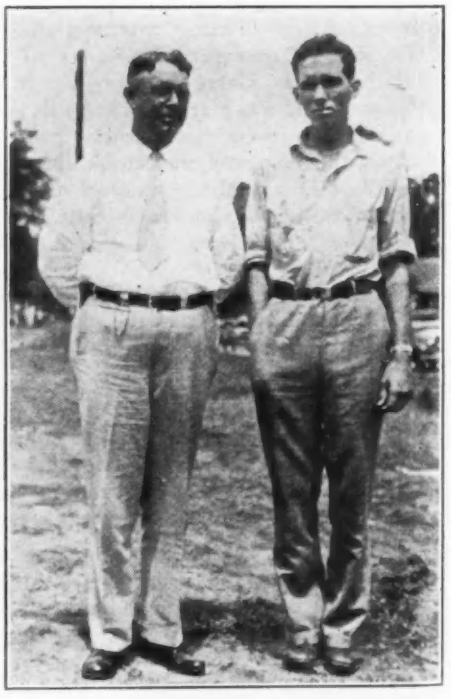
C. S. Hardin, left, representing Lufkin Foundry & Machine Company in East Texas; and E. L. Johnston, recently made production superintendent for Wellington Oil Company, of California, with headquarters in East Texas, where this company is developing its holdings.

R. E. Kimsey, Hughes Tool Company salesman, recently transferred to East Texas from Midland, where he covered the West Texas territory for some time.

Fred M. Allison, Jr., (left) of Corsicana, visiting his Dad's drilling operations in East Texas; and Fred M. Allison, Sr., well known for his work with the A.P.I. on straight-hole drilling.

Jack Griffis, construction foreman for Gulf Production Company, left, and L. C. Becker, construction foreman for Shell Petroleum Corporation, both working for the past three weeks on the Bell-Graddy burning well at Kilgore.

Ted S. Shroeder of the T. S. Shroeder Drilling Company, Dallas, one of the most active drilling contractors in East Texas. Snapped near his camp on the Kilgore-Gladewater road.



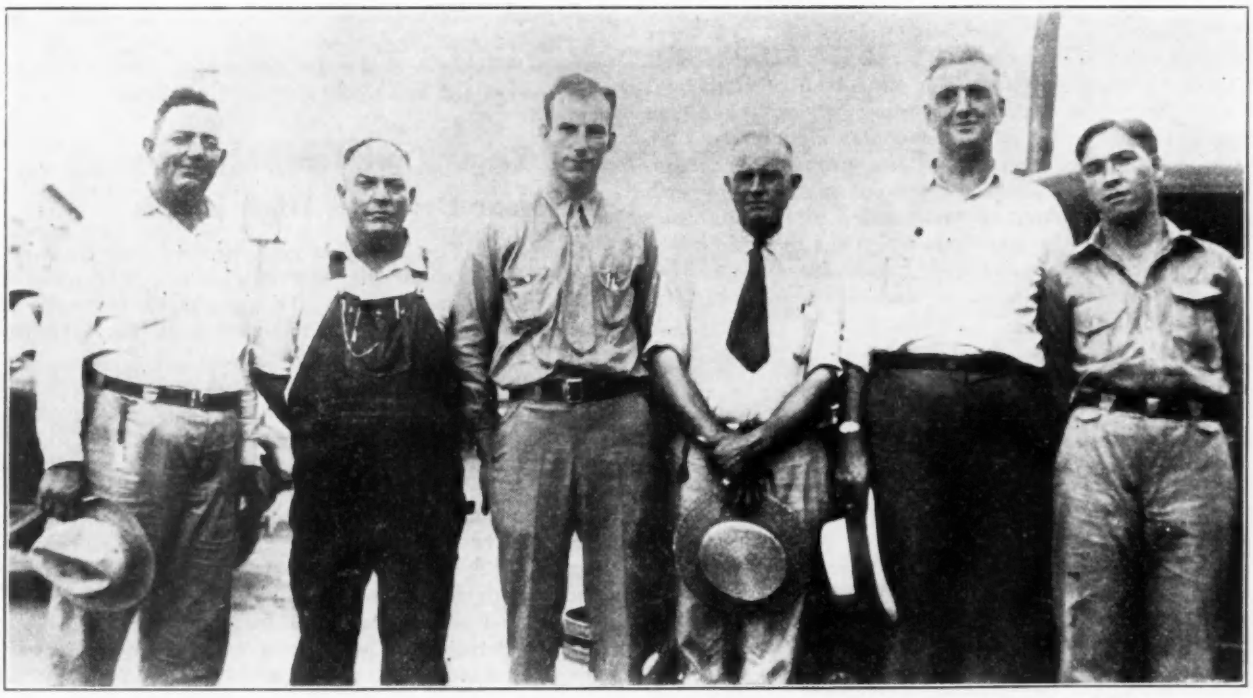
John G. Lane, drilling contractor of Wichita Falls, now operating in East Texas, left, and Bobbie Ahrens with Southern Mill & Manufacturing Company in Longview.

A Photographic Record of Who's Where in East Texas

M. G. Ross, recently appointed sales manager for T. T. Word Supply Company, left, with two of his Joinerville store men, B. F. Allison and Jack Linn.

A. W. Shaw, drilling superintendent for Magnolia Petroleum Company in East Texas, with headquarters at the company's Willow Springs camp.

E. L. Davenport, (left) superintendent of drilling and production for Shell Petroleum Corporation in East Texas, and E. Stanley Durward, division mechanical engineer for Shell. In the background is the Bell-Graddy well fire.



Left to right: Butch Bess, tool pusher for Strube & Strube, drilling contractors of Corsicana, located at Henderson; Claud Hammond of Texas Iron Works, living at Henderson; Rob Chapman, Wilson Supply Company, living at Joinerville; E. L. Johsnon, transportation department, Humble Oil & Refining Company, East Texas field; Lu Childs, Louisiana-East Texas district manager, Reed Roller Bit Company, located at Henderson, and Bill Johnson, Wilson Supply Company, at Joinerville.

Oil and Gas Pipe Line Activities

▼ ▼ ▼

Texas Pipe Line Enlarges Pump Station Facilities

Houston.—Through enlargement of pump station facilities Texas Pipe Line Company is increasing capacity of the San Augustine-Port Arthur section of its trunk line system serving East Texas and North Louisiana, and will be able to handle 60,000 barrels daily through this part of the system upon completion of the new expansion program, as against 50,000 barrels at present.

The increased facilities are being provided in order to equalize pipe line capacity out of North Louisiana with that out of East Texas. For in handling crude from the flush East Texas field Texas Pipe Line Company can pump 55,000 barrels daily through its new 10-inch carrier from the field to Douglass Station, Nacogdoches County, sending around 20,000 barrels daily from Douglass station around the northwesterly route via Corsicana to the Gulf Coast, and approximately 35,000 barrels daily southeasterly from Douglass station through a single eight-inch line to San Augustine station with aid of Rodolfo intermediate station. Operation of the Douglass-Rodolfo-San Augustine unit at or near capacity has resulted in congestion of crude in the system south of San Augustine and in backing up of oil in the line leading out of Northern Louisiana to San Augustine station.

The larger capacity of the San Augustine-Port Arthur portion of the system will be attained through construction of three new pump stations and reinforcement of facilities of other stations. The San Augustine station which recently burned is being rebuilt and will have larger capacity than formerly, and capacities at Jasper and Bunker Hill stations, Jasper County, are being increased. The three new intermediate stations will all employ centrifugal pumps driven by Diesel oil engines, the same kind of equipment used on three new stations between Corsicana and San Augustine; and incidentally, these stations represent an innovation in pipe line pump station equipment, centrifugal pumps being in common use but not in connection with Diesel engines. Naming them in order of location from north to south, the three stations which are to be built will be between San Augustine and Jasper stations, between Jasper and Bunker Hill stations, and between Bunker Hill and Port Arthur.

East Texas Line Capacity Increased 58,500 Barrels

Longview, Texas.—Installation of additional main line pump stations on three of the trunk lines handling East Texas crude to the Texas Gulf Coast will increase the direct trunk line capacity of the field about 58,500 barrels, or almost the equivalent of three, eight-inch trunk lines. The field will have 650,000 barrels of trunk line facilities daily when all of these authorized stations are installed, and construction work is completed on the trio of 10-inch carriers now under way. The above figure does not include the 40,000-barrel capacity 10-inch trunk line authorized by the Texas-Independent Pipe Line Company, which is at work on survey and right-of-way.

Sinclair-Texas Pipe Line Company is moving in materials to add two more stations along its 85-mile, 12-inch carrier from Troup station to Colonels station, near Mexia, where connection is made with Pure Oil Pipe Line Company of Texas. These two new stations will boost the capacity of the line from 60,000 to 90,000 barrels daily, and will be in service before September 1. One motor driven, 30,000-barrel capacity centrifugal pump unit is being added to the Troup and mid-way station. These two stations were handling in excess of 61,000 barrels daily from the field to Colonels station late last week.

Liberty Pipe Line Company increased the capacity of its 45.6 mile, eight-inch trunk line from 22,500 to 26,000 barrels daily late last week by the installation of a motor-driven centrifugal pump unit about 14 miles southwest of the station in the heart of the Kilgore field. This line ties into Pure-Van Pipe Line Company's 10-inch trunk line at Rusk station, Cherokee County, and the latter transports the oil to terminals at Smiths Bluff, near Beaumont.

Magnolia Pipe Line Company is adding two more main line stations on its 12-inch carrier extending from Kilgore station to Corsicana, a distance of 100½ miles, thereby increasing the capacity from 55,000 to 80,000 barrels daily. The new stations will be equipped with motor-driven, centrifugal pumps, or a duplicate of the mid-way station now in service. Oil movement via this line was stepped up to a peak of 59,811 barrels daily late last week, or greater than the rated capacity, while the company is also moving from 48,000 to 50,000 barrels daily from Kilgore field station to Center, Texas, thence to Beaumont and also northeast from Center station to storage tanks in Northern Louisiana and Arkansas.

Filling of the north half of Sun Pipe Line Company's 10-inch trunk line, which is being built from Gregg County to a point near Beaumont, will begin late this week in order to relieve field storage. This trunk line is scheduled to be completed and in service late in August.

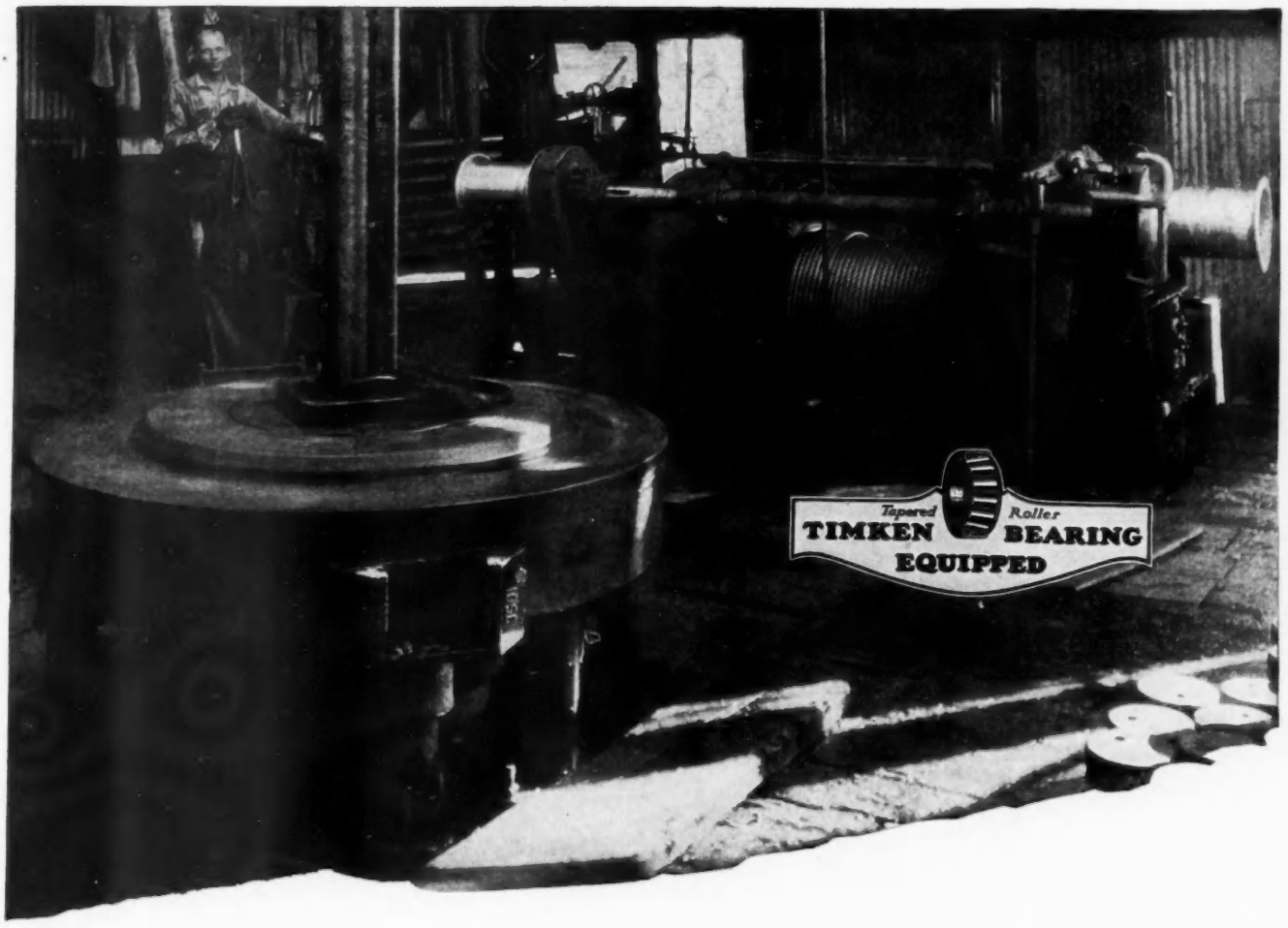
East Texas Tank Car Shipments Are Near Previous High Levels

Longview, Texas.—Tank car shipments of crude from the East Texas district are approaching previous high levels maintained prior to the completion of trunk lines into the area, and during the past week averaged about 163,000 barrels daily.

The Texas Company was credited with having received an average of about 50,150 barrels daily during this period at its refineries at Port Arthur, Galena, near Houston, and at Dallas. The bulk of this oil was recently contracted for by the company from a group of operators in the Joiner and Kilgore areas, while tank car shipments have been necessarily heavy because of a recent pump station fire at San Augustine having cut down the East Texas pumping capacity on The Texas Pipe Line Company's trunk line leading direct to Port Arthur.

Shell Petroleum Corporation is credited with having shipped an average of about 28,000 barrels daily including 9100 barrels daily loaded by Sabine Oil & Pipe Line Company.

Humble Oil & Refining Company shipped an average of 6500 barrels daily to refineries controlled by Vacuum Oil Company at East St. Louis and Wood River, Illinois.



TIMKEN has 30 Bearings on the Doheny Stone "Hydril."

The manufacturer says: "We started using Timken Bearings in diamond drill equipment many years ago, so it was natural for us to Timkenize our difficult bearing applications when we designed our first rotary and draw works in 1920." More Timken Bearings are used in the oil fields than any other type of anti-friction bearing. Specify Timken-equipped.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* BEARINGS

"They Prorated His Horns Off"

SO prominently has the name of Carl L. Estes been linked with oil of late the industry is interested in knowing more about him. Without any doubt he has been on the receiving end of more cussing than any other one individual who has ever set out to nurse a sick spoke in the wheel of this business. With the cussing has come equally as much praise from the other side of the fence. Right or wrong, he at least deserves a formal introduction.

"We understand you have horns—mail us your picture," an out-of-state daily newspaper wired Estes recently, only to receive the following answer: *"They've prorated my horns off—mailing out no pictures!"*

That answer is pretty characteristic of the militant Estes, Tyler, Texas, newspaper editor, who took it upon himself, following the discovery of oil in East Texas, to fight what he construed to be the cause of his farmer folk against what he called "premature" proration. Certainly Estes is in need of no publicity, and says he is wanting no more; that he did not want publicity in the first place, although his name has been in the limelight wherever the population is concerned in oil throughout the nation since the discovery in East Texas.

Estes says he went into his fight for the land owners of East Texas "who have gone through life with a piece of corn pone in one hand and salt pork in the other," trying to make a living out of land that was top-heavy with mortgages. His position on the situation at the beginning was that every farmer in East Texas living within the royalty zone should get a break by being allowed to share in the field's output; that a reasonable curtailment could be worked out after the acreage was drilled. True enough, Estes admits he was only looking for a fair size bay—not an ocean of an oil field. He is a strong proponent of the Cranfill plan of limiting the field to 300 barrels per 20-acre unit, with the exceptions that the plan carries.

CARL ESTES

Tyler newspaper editor—"champion of the independent" say his friends. "Self appointed leader whose misguided efforts will cost his friends millions" say others.

Estes is as hard a worker as he is a fighter. He is gray haired at 33. Since the World War, when he lost his health in an officers' training camp at Leon Springs, Texas, he has been reduced to retirement for a period every summer on doctors' orders. But if he can not satisfy himself that his job as secretary of the East Texas Lease, Royalty and Producers' Association and his self-appointed job as leader of the army of piney woods farmers is not properly completed it looks like it is going to take more than doctors' orders to put him to bed this summer. He is editor of three newspapers which thunder the voice of the East Texas pine hills almost to a single family from his hometown of Tyler.

Estes has spared no space in his press to lay the cause of East Texas land owners and individual operators before the public. And he has not burried the cause of his opponents. He attends every meeting where East Texas oil matters are concerned. When his opponents flay him, he quotes them on his front pages; and the louder they condemn him and his policies, the larger display he gives their opinions in his headlines. And many are the eight-column banner head lines in which he has accepted condemnation in his own newspapers.

On the other hand he is pictured by some who are not exactly to be classed as "friendly" with him, as a man who has on at least one occasion taken advantage of his physical condition to strike a man, and cite the Ed Landreth incident when Estes is reported to have struck Landreth—some say with a cane, others that it wasn't with a cane but with a ring which he wears. These not so "friendly" people say that Estes could feel fairly assured that Landreth, who is a large man, would make no effort to retaliate on Estes who is a frail man.

And they say that Estes got into the pro-ration fight without realizing what he was getting into and that his pride will not let him back down. "He is costing the people of East Texas millions by his attitude and actions" others say.

And the story goes on that when he first began his attacks on some of the major oil companies some of them who were advertising in his Tyler paper at the time, cancelled their advertising on the ground that his actions were unfair. So the story goes, people in the business office indicated that maybe he wasn't playing a business like game, whereupon he responded, so the story goes, that he had been employed as editor of the paper and that if he remained editor he would run it editorially, but that if they didn't like his style of editorship, they could get another editor.

Of course that's just a story as Dame Rumor has it, which probably has little to it because Estes' father-in-law is the owner of the paper and if there has been friction between them close friends say they have seen no evidence of it.

And so the stories go. Some cuss him—some believe that he is a Moses leading East Texas out of the wilderness of "mortgages and corn pone."

But whether he is cussed or liked, he stands as an exponent of the old fashioned type of journalism which welcomed a fight instead of avoiding it and which, once in a scrap, had no other business until the scrap was finished.

The HIDDEN QUALITY that GIVES LONGER LIFE

If Toncan Iron could talk it would probably brag about one quality which, while hidden, means more than every other—its uniform resistance to destructive attack. For Toncan Iron is just that—uniformly fortified against the inroads of rust and corrosion from one end of the pipe to the other, from the inside surface to the outside, throughout the shallow threaded section, at cut ends, at bends and through the couplings.

Toncan Iron is an alloy of refined iron, copper and molybdenum—a reflection of metallurgical progress through more than twenty years. Like any quality product it costs a little more. In the first place, the copper and molybdenum themselves are expensive. Also, the alloying and refining operations materially increase production costs. Yet, in the final analysis, it is the refining of the iron and the alloying of the iron with copper and molybdenum which make Toncan Iron a real economy—which make it a low cost ferrous pipe figured on the basis of additional useful troublefree years of life.

REG. U.S. PAT. OFF.
TONCAN
COPPER
MO-LYB-DEN-UM
IRON PIPE

REPUBLIC STEEL
CORPORATION
GENERAL OFFICES: YOUNGSTOWN, OHIO

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, *Staff Representative, Tulsa, Oklahoma*

▼ ▼ ▼

Oklahoma City Records Lowest Daily Production Since 1929

Oklahoma City.—After establishing such records as largest high gravity oil well in the world, largest potential of any area in the Mid-Continent, and what not, during its 2½ years of existence, the Oklahoma City pool has about-faced and is going as far in the other extreme so far as development and production are concerned. Daily average production for the week ending Saturday, August 1, was 65,810 barrels, the lowest point to which it has dropped since the week ending December 21, 1929, when it averaged only 65,500 barrels. Analysis of the drilling reports as of July 28, shows 41 drilling wells, including those shut down waiting on cement to set, 18 locations, and 19 rigs shut down for various reasons. A majority of those in the latter class are temporarily shut down but are not expected to come into production for several months. At the end of the week 18 wells were below 6000 feet, of which five were waiting on cement to set on the last string of casing and seven were drilling plugs or making connections.

The most important development of the past several months was climaxed when Phillips Petroleum Company and Shell Petroleum Corporation completed their Egermeier 1, SW SW SW Section 23-11n-3w, extending production approximately 3000 feet to the southwest near the central part of the pool and in an area of unexplored Wilcox sand. After drilling Wilcox sand from 6426 to 6505 feet, operators bailed down 500 feet and the well came in flowing 1847 barrels in 2¼ hours with gas at the rate of 14,200,000 cubic feet. Gravity of the oil is 39.5 degrees A.P.I. at 74° F. had run exceedingly low and many geologists believed that has existed since it was spudded. Tests farther southwest had run exceedingly low and many geologits believed that the Wilcox sand might be below the oil-water contact as defined on the south end of the pool. The minus 5425-foot contour had been set as the danger point on the basis of data on wells in Sections 25 and 36-11n-3w.

A tentative correlation presented on page 104 of the July 31 issue of THE OIL WEEKLY indicated that base of Pennsylvanian and top of the Wilcox might be expected at about 6435 feet, assuming a uniform interval between the top of the Oswego lime and base of the Pennsylvanian. Finding of the Wilcox nine feet higher proves that there is no distinct change in the southwest dip as had been anticipated by some, and indicates the possibility of several good producers farther to the southwest.

This was the only completion in the pool during the week.

After producing 1,036,778 barrels of oil from Arbuckle lime, Indian Territory Illuminating Oil Company's Oklahoma City 1, SE SE Section 24-11n-3w, discovery well of the Oklahoma City pool, is back on the productive list as an 80,000,000-foot gasser at 4820 feet in the Layton series. When being drilled during the period June to December, 1928, top of the Layton was encountered at 4787 feet, where nine-inch casing was cemented. At 4805 to 4816 feet gas estimated at 47,000,000 cubic feet was encountered. This was protected by heavy rotary mud. Setting of the nine-inch string on top of the Layton series greatly facilitated reworking of the well since it was only necessary to break out and pull the six-inch and plug back to the desired depth, leaving the larger casing both as a water and production string.

Ritz-Decker-Garrett Area Most Active Kansas Field

Wichita, Kansas.—The situation in Kansas very closely parallels that of Oklahoma where one major pool contains about half of the activity of the entire state. The Ritz-Decker-Garrett area of McPherson County led with a total of 45 operations, of which 24 were drilling wells, 10 were shut down, and 11 were locations, rigs, or cellars. Out of a total of 33 wildcat operations only 15 were drilling and a majority of these were located in the western part of the state, principally in western Rice and Ellsworth Counties. Showing of the 10 wildcat wells that have been completed on the Ellsworth Arch and the four now drilling, mark this area as the most highly progressive oil country to be discovered in Kansas in the past few years. There is little doubt that a return of normal times would bring about an extensive drilling campaign which might rival anything that has been seen in the Mid-Continent.

Ritz-Decker-Garrett

Stanolind Oil & Gas Company held the honors last week when its Flook 4, NW NW NW Section 1-20s-2w, was given a potential of 4186 barrels from chat at 2924 to 2958 feet. This test further demonstrates the erratic nature of production from that formation. Olson Drilling Company's Keohn 3, north offset to the Flook 4, is a 500 or 600-barrel well in chat at 2977 feet where it is being plugged back to shut off water. Dickey Oil Company's Eva Decker 1, west offset to the Olson, Koehn 3 and northwest offset to the Stanolind, Flook 4, is the largest well in the area with a potential in excess of 6600 barrels. All three wells are at about the same point structurally and the only satisfactory explanation that may be offered in regard to difference in initial production must be based on a widely varying condition of porosity.

Lario Oil & Gas Company's Miller "B" 1, NE SE NW Section 6-20s-1w, was the largest lime well when its gauge showed a potential of 2150 barrels from Viola lime at 3415 to 3428 feet. Twin Drilling Company and Phillips Petroleum Company completed their Gratton 2, SE SE SE Section 19-19s-1w, swabbing 673 barrels of oil and 20 barrels of water in 12 hours from Viola lime at 3417 to 3429 feet. Gas production was extended in the Kaegi area when Magnolia Petroleum Company completed its P. J. Klasson 1, NW NE NW Section 21-19s-1w, gauging 24,000,000 cubic feet from chat at 2912 to 2955 feet.

The Kaegi area just west of Canton Townsite is proving attractive because of the large gas wells that are being completed and the probabality of oil production farther down structure.

Three locations were made in this sector during the past

week. Darby Oil Company announced location for Fletcher 2, SWc SE SW Section 16-19s-1w, and Kaegi 3, SE SE NE Section 20-19s-1w. Youker & Shell Petroleum Corporation's Sellers 2, NW NW SW Section 19-19s-1w, is a new location north of the Garrett pool.

Rice and Ellsworth Counties

Robertson et al's Rainey 1, SW SW SW Section 3-21-6w, in the western edge of the old Welch pool in southeastern Rice County, had a good show of oil in the top of the chat and was drilling at 3255 feet. It is said to be running more than 20 feet structurally higher than the Rogers and Hipple well which is located about one-half mile to the northeast. Geologists have experienced considerable difficulty in determining the exact structural condition existing in the pool. In contouring on top of the chat it is necessary to deal both with structure and topography of an old land surface, the combination of which results in unusual complications.

Allison and Fitzwilliams were underreaming eight-inch casing at 2914 feet with total depth at 2942 feet in their Blake 1, NE NE NW Section 9-18s-10w, wildcat test in northwestern Rice County. A core was taken at 2937 to 2942 feet but the hole was caving so badly that it revealed mostly shale. Bottom of the hole is believed near the top of the Kansas City-Lansing group.

Lowden et al encountered top of the Wilcox at 3535 feet and had a hole full of water at 3560 to 3570 feet in their No. 1, NE NW NW Section 2-29s-1e, about seven miles south of Wichita. The last report showed the test drilling ahead carrying a hole full of water.

Shut Down Well to Run Casing On South Edge of Mission Pool

Seminole, Oklahoma.—J. Edward Jones, George E. Burgher, and Exchange Drilling Company are shut down to run casing in their Charley 1, SW NW SE Section 18-8n-6e, in the south edge of the Mission pool in Seminole County. After topping Viola lime at 4210 feet and penetrating Wilcox sand from 4296 to 4300 feet the well was shut down to assure a more conclusive test of that formation. A good showing of oil was found in the uppermost part of the sand but the last few feet showed evidence of salt water. After running casing the well will be standardized. It is three locations west and one north of Gypsy Oil Company's Jessie Owens 1, which was a dry hole at 4434 feet.

Magnolia Petroleum Company missed the "Grey" sand and topped the Cromwell at 2750 feet in its Billington 3, SW SE NW Section 29-6n-6e, on the south end of the Konawa pool. A core at 2754 feet showed oil and the test is now shut down to run casing. Stanolind Oil & Gas Company's Burk "D" 1, NW SE Section 32-5n-5e, in the Allen area, was the only producing well added during the week in the Seminole district. Deepened one foot to 2579 feet in Wilcox sand it swabbed and flowed 942 barrels in 24 hours, showing a nice increase from the last foot of hole. It is estimated good for 60 barrels per hour on the swab. The same operator's Roberts 1, NE SW NE Section 32-5n-5e, topped Viola lime at 2348 feet and had 600 feet of oil in hole in eight hours; total depth was 2431 feet.

Boettcher Oil & Gas Company completed its Schramm 1, CSE NW Section 11-7n-8e, in the Wewoka-Holdenville gas area in western Hughes County. Gas flow was estimated at 30,000,000 cubic feet from sand at 2957 to 2974 feet.

Southern Oklahoma's Deep Test Now Below 8890 Feet

Tulsa.—Mid-Kansas and Ramsey's Preston-Culp 6, NWc NE Section 6-5n-9w, is being closely watched because of its great depth and the possibility of discovering productive sands at greater depths than have heretofore been found in the Mid-Continent. It is now being drilled below 8890 feet after encountering a show of gas that threatened to blow out at 8873 feet. The test is now equipped with a blow out preventer.

One of the outstanding points of interest is the fact that operators have maintained a large hole and are now drilling with an 8¼-inch bit. This will permit the running of two additional strings of casing if necessary to attain the desired depth. Tentative correlations place the Checkerboard lime at 6050 feet. In the Oklahoma City pool, this formation is encountered at 5200 to 5400 feet and only about 600 to 800 feet separate it from the base of the Pennsylvania. Bottom of the hole is now believed to be in lower Deese formation which is early Pennsylvanian in age. The interval of more than 2800 feet between top of the Checkerboard lime and present depth is further indicative of a southern Oklahoma type section.

Tatums Pool

Two wells should be completed in the Tatums pool during the coming week, leaving one drilling well and one rigging up. Carter Oil Company, Cox and Hamon are fishing for a joint of six-inch pipe after drilling plugs in their J. B. Spraggins 1, NW NW SW Section 19-1s-2w, on the east edge of production. Casing was cemented at 1780 feet after logging broken oil sand from that depth to 1965 feet. Magnolia Petroleum Company's Mose Dickerson 5, NE NE SE Section 24-1s-3w, penetrated solid oil sand from 1969 to 1981 feet and is shut down waiting on cement to set. This is the fifth test on a 40-acre tract, three having been good producers and one a deep dry hole offset in all directions by producing wells. Frank Gouin and K. D. Oil Company were drilling below 1940 feet and hoped to encounter pay around 2200 feet in their M. E. Burton 1, CS½ SW Section 30-1s-2w, three-eighths of a mile south of production. Carter Oil Company's Wirt Franklin 4, NE NE NE Section 24-1s-3w, is still a rig. It is understood that tools will be moved to this location when the company completes J. B. Spraggins 1.

Northeast of Marietta

Batson, Starritt and Autry are drilling below 1350 feet in their Dr. Autry 2, SE NE Section 27-6s-2e, Love County wildcat about seven miles northeast of Marietta. Operators have not definitely announced how deep they intend carrying the test. It is now several hundred feet into the Pennsylvanian after penetrating a partial section of Cretaceous.

Cheyenne, Wyo.—On July 25 the Interstate Commerce Commission ordered a downward revision of freight rates on refined petroleum products from certain Wyoming points to Montana and thus awarded the contest for the removal of discrimination existing between interstate shipment of petroleum and petroleum products to the Wyoming refiners. It was claimed that rates within Montana were so low as compared to rates from Cody, Greybull, Casper and Glenrock, in Wyoming, that Wyoming refiners found it impossible to compete with Montana refineries. Commission stated that the record demonstrated that the reduced Montana rates diverted considerable traffic from Wyoming refiners to their competitors in Montana.

News From California Fields

BRAD MILLS, ***Staff Representative, Los Angeles, California***

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Huntington Beach Deep Test Develops Good Gas Pressure

Los Angeles.—Superior Oil Company has developed a good gas pressure in Gillette 7-2, a deep test in the Huntington Beach field, but probably will not make a test at anywhere near the present depth of 7840 feet. This company originally favored the 7400-7600-foot level, but developments in another well changed the views. The formation is running to sand and shale.

W. E. McCaslin is having trouble with Transport 1, the deepest test yet drilled which is now being tested at 8365 feet, and may not be able to get more than a small amount of light oil under present conditions. Absorption oil was pumped into the sand and held under pressure, with the view of bringing fluid into the hole. The well will be swabbed again. A small amount of light oil was bailed from the top of the fluid, but nothing like commercial quantities have been recovered. The well is not in exceptionally good mechanical condition, due to the small hole below the last water shut-off.

Several companies are awaiting the outcome of the two deepest tests, but it is a foregone conclusion that a drilling campaign will be staged if a good well is completed. Unemployment, lower equipment sales and the desire of the average Huntington Beach operator to increase his production will lead to activity, following discovery of a new producing zone.

Los Angeles Basin Area Devoid of Developments

Los Angeles.—Elimination of the Playa del Rey field as a troublesome factor, at least as far as field development is concerned, leaves the Los Angeles basin without a district in the midst of an original wave of drilling. Activity has ebbed to a bare four projects, with nothing in sight to stimulate drilling. The field has been a much more consistent producer than the average observer expected, but the course of development ran the same course pursued by any townlot area, and the decline has been steady, even if slow. The average small operator thinks he is a victim of circumstances, but the odds were overwhelmingly against the average company from the beginning.

Typically a townlot field, Playa del Rey was largely exploited by promoters and small companies. The major companies shunned the field on the theory that the small lease sector could end only in a headache. Many small operators who had had no previous experience jumped in with both feet to develop the field. The type of blanket receivership now planned gives some idea of the success of the ventures. Not all companies are in the hands of receivers, but many of the smaller ones are. The supply houses are standing by to give aid, but they have a selfish interest to serve: they advanced credit to these companies and have not been paid for their supplies.

Development of oil in the schist is not nearly as important as reported. It is true that two recent completions were finished in the schist, but one was not a large producer, and the other is also producing from a section of the lower zone. Deepening of many wells should increase production, but the bottom of the oil zone, rather than the schist should prove the cause for the increase over a long period.

Kettleman Wells Have Good Gas-Oil Ratios and Initials

Coalinga, Calif.—Kettleman Hills has been running true to form, with an average initial production fully as high as expected, and with a gas-oil ratio that has become the envy of districts unable to shut off the excessive gas flow. Edge wells and inside producers alike have been completed with an average gas-oil ratio not considered excessive, but the edge completions have made the better showing in this respect. It is not now unusual to obtain less than 1000 cubic feet of gas per barrel of oil, where the original producers flowed up to 50,000 cubic feet of gas per barrel. Shutting off of the upper portion of the Temblor formation, or in reality the shale above the Temblor, has worked wonders with production, even if the gravity of the oil has been reduced from 61 degrees to 35 degrees. All of the formation which produced the first oil is now shut off to reduce gas waste. This practice is expected to result in the elimination of all gas waste, but it may be possible that a shortage will exist before the end of the winter.

Associated Oil Company is coring at 8775 feet in Whepley 1 and will complete this well as soon as a suitable shale body is found in which to land the oil string. With a shut-off at 7073 feet, this well has cut about 1675 feet of shale and Temblor formation. Much of this upper portion will be shut off. Whepley 1, an offset which was completed last year, is still flowing 1400 barrels of 41.5 gravity. This well was completed slightly deeper in the formation than previous producers and was one of the first producers to yield an intermediate gravity crude. Whepley 2 is nearing the record depth for commercial production but no special effort will be made to establish a new mark. The Whepley lease is located on the northeast plunge of the structure, but is not considered an edge test.

Petroleum Securities Company is changing to steam power in Burbank 1, the Middle Dome test which was drilled to 7330 feet. The 8⅝-inch water shut-off was approved, but upper water has caused some trouble. The water is coming in between the 11-inch and 8⅝-inch strings, but will be shut off anyway. Early reports that this important well was wet were attributed to upper water showings.

North American Consolidated Oil Company is sure that the Bentonite marker has been cut in Blauvelt 1, an edge test on the North Dome which has been drilled to 8485 feet. Top of the shale has not been found, but the marker was found at 8435 feet. Preparations are being made to run the longest string of nine-inch casing ever landed. About 8500 feet will be run to establish a record. This well already holds the record with 13⅜-inch casing, 6763 feet of this size having been landed successfully early in the year.

Killing of the troublesome gas producers will gradually reduce the gas waste to a minimum. Three wells are still

producing with extremely high gas-oil ratios, but all of these producers probably will be killed, unless likelihood of a gas shortage should develop. Wells can be killed in this field as in any other field, despite the former belief that such a practice would result in disaster. Pressures are not as high as at the time of completion, but even new wells could be killed in case of emergency.

Associated Oil Company has definitely drilled through the Temblor formation and into the Kreyenhagen shale in Whepley 2, thus establishing the thickness of the producing formation at this point. At 8744 feet, the formation ran to a hard gray sand which showed a good cut. The last cores taken above bottom showed fish scales and fossils which have been identified with the Kreyenhagen shale. Drilling was stopped at 8789 feet. Since the nine-inch shut-off was effected at 7073 feet, more than 1700 feet were required to pass through the Temblor zone. The well is located on the dip, however, and perhaps 1600 feet would be sufficient to find bottom higher on the structure. This is one of the most important developments since the discovery well was completed.

Interest in Lost Hills Centered in Deep Test

Bakersfield, Calif.—Interest in the Lost Hills field now centers on General Petroleum Corporation's Lost Hills 1301, the only active deep test in the area, but the Temblor formation probably will not be picked up at anywhere near the present depth of 3825 feet. Lost Hills 1301 is located on Section 13-26-20 and near the northwest tip of the field, but this is regarded with favor, as far as the Temblor sand is concerned. A string of 11¾-inch casing was re-cemented at 3650 feet, following the coring and drilling of a bothersome streak of water zone.

The Lost Hills field holds promise in the Temblor formation, but the two wells now idle probably fell far short of their objective. Far out in the valley, the deposits are thicker than those nearer the fringe of the great fill. This leads geologists to believe that the Temblor may not be found short of 7000 feet.

Attempting to complete a well short of the Temblor could be compared with attempting to complete a well in the brown shale around 6000 feet at Kettleman Hills.

Los Angeles Basin Wildcats Show Little Change in Week

Los Angeles. — Various Los Angeles basin wildcats showed little change during the week.

Standard Oil Company of California is running a string of casing to 5582 feet in Irvine 1, a deep test in the Newport district, but a production test will not be made. The casing is being run as a precautionary measure only. Shallow production was developed a generation ago in the Newport field, but Irvine 1 is a short distance from this group of old producers. Nuoil Company is drilling in hard shale at 1800 feet in Gessell 1, also a test in the Newport district. Graham-Loftus Oil Company is coring at 9205 feet in No. 1, a deep test in the Olinda district. This has become one of the deepest wells ever drilled in the Los Angeles basin. A string of 5¾-inch casing was landed below 9000 feet. Gieck Oil Corporation has suspended operations in No. 1, a wildcat in the Sunset Beach district, after drilling to 5955 feet and losing drill collar and bit in the hole.

Of the several other active tests, none failed to develop an important showing during the week.

Small Rincon Producer Shows Weakness of Tideland Leases

Ventura, Calif.—Completion of General Petroleum Corporation's Ferguson 3 as a small producer in the upper zone at Rincon does not indicate development of a large production on tideland leases in this district. The portion of the field skirting the mainland was notorious for its failure to produce consistently, and it was thought that the section covered by the Pacific Ocean would make a much better showing.

Ferguson 3, the most recent completion, was finished at 2610 feet and flowed 175 barrels of 28 gravity clean oil on the first test. Ferguson 2 was a better well but it failed to show the field as a close relative of Ventura Avenue.

More than a year ago, much tideland activity was planned, but the expense of building piers and the likelihood that only small wells would be completed were sufficient to retard field work.

The Rincon field, after three years, is producing only 2000 barrels. The oil sands have been broken and inconsistent, although the few tideland completions have indicated a slightly better condition a short distance off shore. General Petroleum Corporation built a very long pier to drill Ferguson 2, and permitted other companies to build additions to reach their permits, the original section being used as a common road.

North Belridge Deep Zone Is Not a Serious Threat

Bakersfield, Calif.—The deep zone at North Belridge does not constitute a serious threat, despite the early belief that the Temblor formation might prove productive over a wide area, and the subsequent completion of two good producers. The narrow producing strip in the shallow zone will be closely paralleled by the deeper zone, and the latter may be even smaller in total area.

Belief that wells deepened anywhere in the general district would find the Temblor productive has been dissipated by failure of several tests outside the producing area in the shallow sand.

Continental Oil Company's Result 2 is flowing by heads from 5475 feet, but production is far from satisfactory at this stage. This well was deepened and will make a commercial producer, but the flow by heads still shows mud. Belridge Oil Company is drilling in oil sand at 5200 feet in No. 27-64, and should complete the well as a good producer.

Three large wells have been completed in the deep zone, but production has been reduced to meet curtailment requirements.

Santa Barbara, Calif.—Bolsa Chica Oil Corporation and Superior Oil Company are drilling at 4400 feet in Permit 191-1, a tideland test off Coal Oil Point, but the Sespe formation in this district does not usually hold much promise. This well developed a flow of oil and water above a plug at 4100 feet, but failed to make a comercial producer. The location was first thought to be on top of the structure, but there are indications that it is on the extreme flank. If this is the case, a new field may be found by moving to a point nearer the top of the structure. A high pressure was developed in the top of the Vaqueros around 4000 feet, but inclusion of too much questionable zone led to failure on a series of production tests. The structure lies entirely under the ocean and its mapping was one of the outstanding geological developments of last year.

East Central Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

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Flush Life of Upper Horizon In Kilgore Area Is Passing

Longview, Texas.—Recent failure of a group of tests to flow when completed in the upper section of the Woodbine sand horizon in the Kilgore area, or mid-section of the East Texas field, indicates the passing of the flush life of this portion of the sand body on some leases. Well owners succeeded in developing large flowing producers by deepening to the lower sand body, but in doing so approached nearer the deadline for bottom hole water than normally desired. Heavy oil drainage given the older section of the Kilgore area is reflected by the lack of flowing pressure in these new completions in the so-called top layer of sand. Leases that have adhered to proration restrictions are affected, thereby leaving no doubt in the minds of operators that a heavy depletion of oil reserves under a property is sustained when unequal withdrawals are made by neighboring property owners.

Voluntary delay by Humble Oil & Refining Company in drilling inside locations on its L. D. Crim 628-acre discovery lease of the Kilgore area while heavy withdrawals of oil have been made by most of the lease owners with one or two rows of wells adjoining on the east, south and west, is now requiring greater sand penetration by some of the inside locations to net flowing wells. This company's Crim 32 failed to flow when given a swabbing test from sand at 3582-3625 feet, but when deepened to 3650 feet responded with a natural flow of 90 barrels oil during first hour; 100 barrels on second hour and 80 barrels on third hour. These gauges were taken through three-quarter-inch choke on the 2½-inch tubing, with casing closed. Crim 33 unloaded at 3644 feet after taking 20 feet of oil saturated sand, and likewise refused to flow, but when deepened to 3659 feet yielded 97½ barrels per hour average on two-hour test flowing through three-quarter-inch choke.

This particular lease is the largest single property on production in the field, and apparently does not have the oil reserve that normally would be expected by reason of having been operated in strict compliance with proration rules. It is structurally high and favored with excellent sand conditions. Some of the adjoining small leases have recovered as high as 75,000 barrels of oil per acre to date by disregarding proration rules. Magnolia Petroleum Company's L. D. Crim 50-acre lease, with seven completed wells, adjoins the Crim discovery lease on the south, and has likewise been restricted to proration allowances in the face of unequal drainage by some neighbors. However, Magnolia Petroleum Company has been authorized to balance its current withdrawals with neighbors, and during the past week was reported to be producing more than 11,000 barrels daily.

The upper sand section in Humble Oil & Refining Company's S. S. Laird 12-A, an inside location on 230-acre tract in the southeast part of the I. Ruddle Survey, refused to flow when given swabbing test in top sand at 3645-3704 feet followed by shale to 3706 feet. This well was deepened and encountered second sand at 3725-3729 feet for an initial flow of 121 barrels of oil during first three-hour gauge through three-quarter-inch choke on tubing. This is a small production compared to the initial performance of nearby wells completed some weeks previous.

Houston Oil Company's E. Thompson 2, located on 39-acre lease in the east portion of the R. E. Winn Survey, was reported to have failed to flow early last week when given swabbing test at 3633-3665 feet, but the swab was lost in the hole on the preliminary test. This well was completed July 29 flowing 105 barrels per hour flowing through one-inch choke on tubing with a total depth of 3668 feet.

East Texas Wells Daily Average Is 428 Barrels

Longview, Texas.—An average yield of 428 barrels per well daily was maintained in East Texas during the week ending July 29 when the 1392 completed wells produced 597,585 barrels daily. This is a gain of 92,400 barrels over the daily average for the previous week, and further increases are assured for the coming week by reason of the more general disregard for proration. The field is producing

East Texas District Operations and Production

Company—	No. Lcns.	No. Derricks and Rigs	Active Tests	Total Operations	Completed Wells	Daily Average Production Past Week
Humble Oil & Ref. Co...	15	40	28	83	144	48,075
Gulf Prod. Co. et al.....	5	8	12	25	94	42,540
Sinclair Oil & Gas Co...	..	2	18	20	37	26,875
Ark. Fuel Oil Co. et al..	..	..	1	1	25	26,270
Magnolia Petroleum Co..	4	5	15	24	78	23,650
Shell Petroleum Corp....	..	..	7	7	42	20,550
Golding-Murchison Oil Company	1	1	4	6	10	16,580
Houston Oil Co.-Jones et al	1	..	2	3	30	12,150
Marine Corporation	1	..	..	1	3	11,200
Nat Hunter Interests...	..	..	..	..	6	10,000
Texas Unity Oil Co.....	..	..	..	..	1	9,175
John W. Hooser et al...	..	..	2	2	4	9,150
Tulsa Oil Co.	..	..	..	..	3	8,420
Tidal Oil Company	..	1	..	1	28	7,980
C. & P. Oil Company...	..	..	1	1	8	5,340
Petroleum Mark't Corp. .	..	..	..	..	6	5,090
W. H. Dunning-J. H. Markham	..	..	..	..	4	5,050
F. & M. Drilling Co.....	..	..	..	..	1	4,285
Barnsdall Oil Co. et al..	..	1	..	1	7	4,100
Upchurch-Allen et al ...	..	..	..	..	2	3,925
Sun Oil Company	2	3	14	19	27	....
Total for 21 companies	29	61	104	194	560	300,405
Miscellaneous companies	99	66	146	311	845	299,105
Grand total	128	127	250	505	1,405	599,510

more than double the amount authorized by the Texas Railroad Commission, and no effort is being made to check the output of proration violators.

The Joiner section of the field contributed the greatest gain during the past week, having averaged 226,845 barrels from 527 wells, or an increase of 44,400 barrels compared to the previous week. Kilgore area continues to maintain its lead, with 597 wells averaging 233,715 barrels daily for the week. The Longview area averaged 137,030 barrels daily from 289 wells.

Major Companies Are Buying East Texas Proven Acreage

Longview, Texas.—Proven oil leases and semi-developed properties in East Texas are being acquired in large numbers each week by major companies and substantial independents at comparatively cheap prices considering the potential oil recovery from such properties. One deal consummated during the past week may result in a trunk line being built by the purchasing company to tidewater connections. With few exceptions the large deals are being made by major companies, who are relieving smaller companies and independents of leases on which the latter can not finance development costs while a crude price range of 20 to 10 cents per barrel prevails.

Tidal Oil Company became the seventh largest owner of productive acreage in the field during the past week by acquiring 21 leases aggregating 2296 acres from Mid-Kansas Oil & Gas Company, producing subsidiary of Ohio Oil Company. This deal involved an unannounced cash consideration and assignment of a number of producing properties controlled by Tidal interests through Great Southern Oil Corporation and other affiliated companies in Kansas, Illinois and Ohio to Ohio Oil Company. Mid-Kansas Oil & Gas Company retained its almost solid block of proven and semi-proven leases on the south end of the Joiner section of the East Texas field.

In addition to acquiring all properties held by Mid-Kansas Oil & Gas Company in the Longview and Kilgore areas, Tidal Oil Company gained possession effective 7 a. m. July 29 of more than 20 miles of pipe lines connected to the above areas; a 50-car capacity tank car rack on Texas & Pacific Railroad at Camps; and a tank farm, consisting of ten 55,000-barrel tanks at the latter point; seven of the tanks have been completed, and work is under way on the remainder. Tidal Oil Company received 25 completed wells on 11 separate leases that have been restricted to proration allowances. Tidal Refining Company is starting work on connecting this acquired pipe line system with its own gathering system in Rusk County to permit the handling of the production of Tidal Oil Company via common carrier trunk line outlets to the Coast, supplemented by the tank car shipments. Tidal Refining Company recently leased Woodley Petroleum Company's rack in the Kilgore area to permit increased shipments.

Tidal Oil Company has in excess of 3300 acres of leases in the field as result of the above purchase, and 53 completed wells are scattered among 2128.64 acres. Some of the untested leases are in doubtful territory. This acreage reserve may induce the company to construct a trunk line to the Houston ship channel below Houston, where a refinery and deep water terminal site was acquired several years ago. All production and crude purchases of the Tidal interests in East Texas are consigned to the Coast for tanker shipment to affiliated refineries on the Atlantic Coast.

Atlantic Oil Producing Company has consummated a deal for the purchase of 1066 acres of proven leases held by Cranfill-Reynolds Company in the Longview and Kilgore area. This deal had been pending for a month, and the construction of Atlantic Pipe Line Company's 10-inch trunk line to Atreco, near Beaumont, was largely predicated on this deal's consummation. The purchaser is reported to have paid $1,000,000 cash, including $200,000 option deposit, and $300,000 additional is to be paid from one-fourth of the first production.

Magnolia Petroleum Company added 238.2 acres to its East Texas holdings in acquiring eight separate leases, with two completed wells, from Woodley Petroleum Company, Shreveport, for a reported consideration of $1000 per acre cash and an additional $500 per acre payable from one-fourth of the oil, with the purchaser giving a refund on development expenditures. These leases are located in the Longview area.

Humble Oil & Refining Company has figured prominently in acreage purchases made lately, and is credited with having about 18,400 acres of productive, or proven oil leases in the field. The Texas Company has likewise been an active buyer of undrilled leases lately, and both of the above companies are still in the market for desirable tracts. Prairie Oil & Gas Company has done some new buying lately, and bought surface rights on the Lacy-Lawther 534-acre tract, Nathan Screws Survey, Gregg County, for a tank farm. Construction of tanks are being held up pending the outcome of legislation underway at Austin.

Production History of East Texas Field

Rusk, Gregg, Smith and Upshur Counties

Sabine River is taken as boundary between Longview and Kilgore districts, and the boundary between Kilgore and Joiner districts is a line extending due east from center of town of Overton.

	Joiner (Henderson)		Kilgore		Longview		Total: Whole East Texas		
Week ending:	No. wells	Av. daily prod.	No. wells	Av. daily prod.	No. wells	Av. daily prod.	No. wells	Av. daily prod. bbls.	Weekly prod. bbls.
Nov. 12, 1930	1	185	...	....	...	....	1	185	1,295
November 19	1	183	...	....	...	....	1	183	1,281
November 26	1	176	...	....	...	....	1	176	1,232
December 3	1	184	...	....	...	....	1	184	1,288
December 10	2	212	...	....	...	....	2	212	1,484
December 17	4	1,579	...	....	...	....	4	1,579	11,053
December 24	4	317	...	....	...	....	4	317	2,219
December 31	4	300	...	....	...	....	4	300	2,100
January 7, 1931	5	501	...	....	...	....	5	501	3,507
January 14	6	2,765	...	....	...	....	6	2,765	19,355
January 21	6	4,650	...	....	...	....	6	4,650	32,550
January 28	8	4,717	...	....	...	....	8	4,717	33,019
February 4	10	7,204	...	....	1	158	11	7,362	51,534
February 11	12	12,104	...	....	1	60	13	12,164	85,148
February 18	17	18,606	1	179	1	5,721	19	24,506	171,542
February 25	18	21,994	4	5,246	1	6,661	23	33,901	237,307
March 4	27	29,116	6	22,343	1	4,578	34	56,037	392,259
March 11	39	45,776	11	29,747	1	7,169	51	82,692	578,844
March 18	48	40,364	17	36,868	5	14,345	70	91,577	641,039
March 25	61	47,862	19	56,482	6	17,769	86	122,113	854,791
April 1	84	51,486	30	68,186	11	24,992	125	144,664	1,012,648
April 8	101	59,687	46	104,544	17	30,754	164	194,985	1,364,895
April 15	129	62,085	69	148,123	25	38,180	223	248,388	1,738,716
April 22	146	70,003	89	169,890	30	58,479	265	298,372	2,088,604
April 29	165	83,847	133	187,217	39	68,713	337	339,777	2,378,439
May 6	172	95,767	171	120,885	46	52,250	389	268,902	1,882,314
May 13	203	92,484	214	116,385	47	48,556	464	257,425	1,801,975
May 20	230	118,036	233	124,265	70	61,511	533	303,812	2,126,684
May 27	251	123,801	273	156,074	86	71,018	610	350,893	2,456,251
June 3	281	119,188	311	165,576	111	66,712	703	351,476	2,460,332
June 10	317	114,290	338	168,015	126	46,729	781	329,034	2,303,238
June 17	350	114,122	379	188,868	142	68,372	871	371,362	2,599,534
June 24	385	114,438	424	163,094	166	82,195	975	359,727	2,518,089
July 1	413	112,351	457	144,655	187	94,951	957	351,957	2,463,699
July 8	433	126,620	495	160,041	221	94,882	1,149	381,543	2,670,801
July 15	473	146,879	522	170,614	236	91,293	1,231	408,786	2,861,502
July 22	493	181,671	558	211,986	256	111,196	1,307	504,853	3,533,971
July 29	527	226,842	579	233,716	289	137,026	1,395	597,584	4,183,088

Total production from discovery of field to July 29, 1931.....45,567,627

EAST TEXAS HIGHLIGHTS

By H. H. KING
Staff Representative

Unusual Drilling Record

An unusual record in fast drilling was made recently in the flush East Texas field when Sinclair Oil & Gas Company's King A-5, P. W. Warriner Survey, Gregg County, drilled from the surface plug at 212 feet to 3454 feet in 52 hours, or at the rate of approximately 62 feet per hour. Five and five-eighths inch casing was set at 3454 feet.

Sale Not Negotiated

A report which was in circulation and which was mentioned in these columns July 24, page 57, has proved to be without foundation. H. L. Hunt et al were reported to have been negotiating with Atlantic Oil Producing Company for sale of 1,000,000 barrels of crude to be delivered to the latter at rate of 5000 barrels daily at 12½ cents per barrel, with full payment for the oil to be made at start of deliveries. A communication from Mr. Hunt, however, reveals that he and his associates have not sold any oil to the Atlantic interests, and that the report of negotiations with the latter for sale of oils was erroneous.

Another Plant for Overton

A fourth refinery for the Overton section of the Joiner field will be placed in operation about August 10 as a result of construction work having been started by Constantine Refining Company, Dallas, on a 2500-barrel daily capacity plant, located southeast of the town on the I&GN Railroad. Eugene Constantine, Jr., is head of the above company, which has contracted for crude over a three-year period, with deliveries to be made by Tyler Pipe Line Company. A 12-car capacity rack will be erected adjacent to the plant.

Release Line Tariffs

Joint pipe line tariffs released by Sinclair and Prairie interests on East Texas crude shipments over their lines to the Mid-Continent and Middlewest points may result in refineries at the latter points becoming interested in attractive crude contract offers in East Texas and have tenders made over the above common carriers' systems. Sinclair-Texas Pipe Line Company, Pure Oil Pipe Line Company of Texas and Prairie Pipe Line Company have a tariff of 66 cents per barrel from Troup station, East Texas, to East Chicago station, Indiana; 50¾ cents per barrel from Troup to Kansas City station, Kansas; and a tariff of 35 cents per barrel from Troup to either Coffeyville or Sands Springs, Kansas. It is reported that a rate of 20 cents per barrel will apply from Troup to Sinco, near Houston. These rates do not include the 10 cents per barrel gathering charge.

New Rack and Gathering Line

Crude gathering and tank car loading services will be available to Gregg County operators through Danciger-Bell Pipe Line Company's six-inch system now under construction from the company's tank car rack on the I&GN Railroad between Longview and Kilgore. This company is owned jointly by Danciger Oil & Refining Company and Bell Oil & Gas Company, and will also serve Danciger Oil & Refining Company's 10,000-barrel capacity refinery now under construction on a site opposite the rack in the S. P. Ford Survey. The first unit of the six-inch field line will extend to the C. C. Clemmons farm, D. Sanches Survey, and it is also planned to lay a line to the Kilgore area.

Installs Gathering System

Installation of a field gathering system, consisting of six-inch pipe, has been started by Lion Oil Refining Company from its W. P. Brett 26-acre lease, F. Cordova Survey, to Magnolia Pipe Line Company's relay station on the Crim land in the Kilgore field in connection with previously reported common carrier service to be performed by the latter to Lion Oil Refining Company's plant at El Dorado, Arkansas. A tariff of 15 cents per barrel will probably apply on this oil movement in view of the fact that the shipper will gather own crude, otherwise the rate would be 25 cents per barrel.

East Texas Crude to Wichita Falls

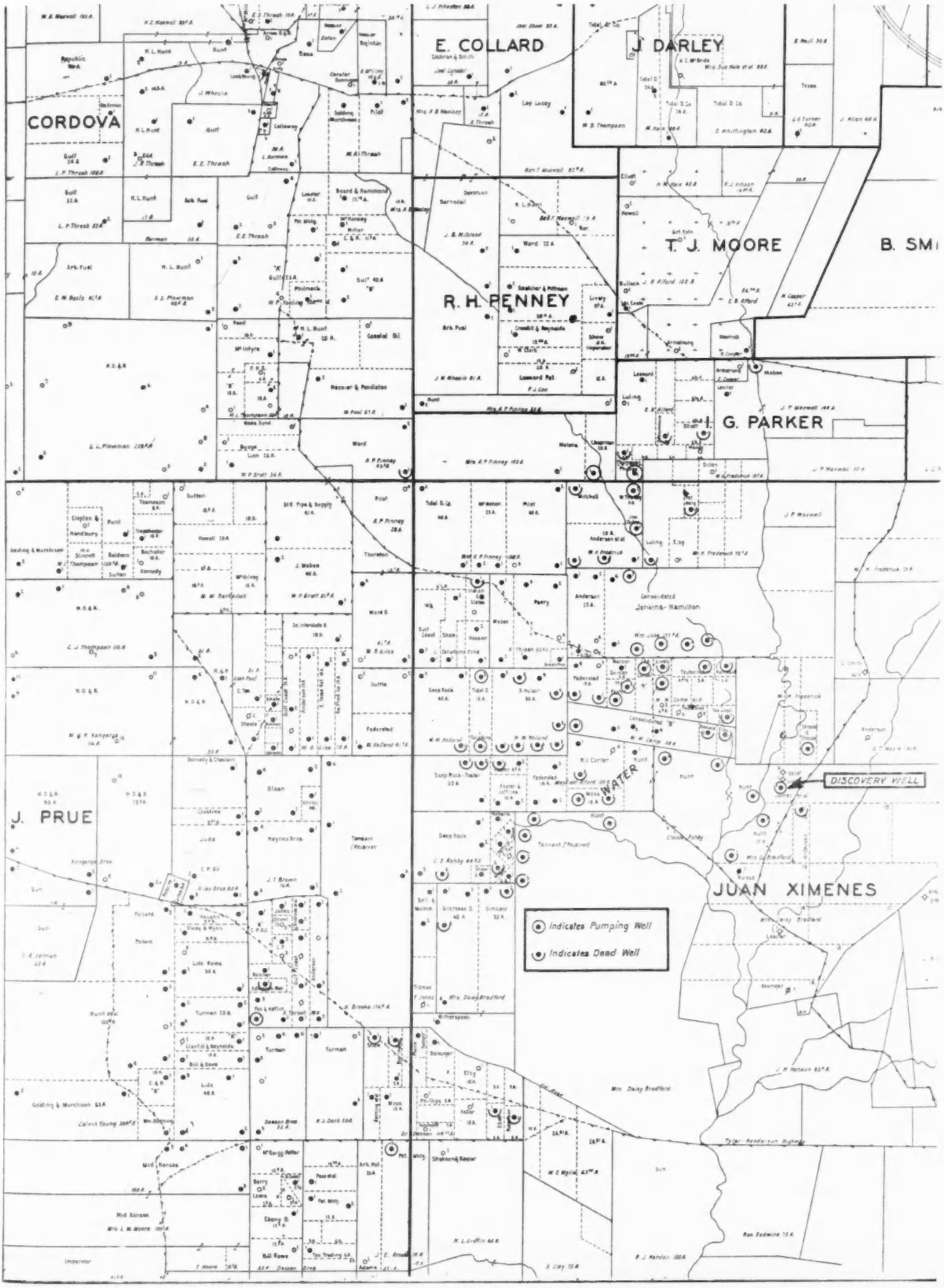
Movement of East Texas crude by tank cars to refineries at Wichita Falls is now under way as result of contracts made recently. Primrose Refining Company is receiving deliveries on a 200-car, or about 40,000 barrels, purchase from Cherokee Chief Oil Company at a reported price of 14 cents per barrel loaded on cars. Panhandle Refining Company is being delivered about 2000 barrels oil daily on a purchase order involving the delivery of between 80,000 and 100,000 barrels daily, with loadings performed by Tyler Pipe Line Company at Tyler. A rail tariff of about 37½ cents per barrel applies on these shipments.

Vitek Well Smothered By the Use of Steam

Tyler, Texas.—Extinguishing of burning oil wells in East Texas became simplified and far more economical during the past week when Paul Vitek et al's G. W. Eaton 5, which has been consuming a huge flow of oil daily since ignited by boiler fire on July 12, was smothered with steam generated by the forcing of water to the bottom of the hole through the tubing. A steam shovel crane was used to deposit the water line in the open tubing and maintain the contact in spited of the flowing pressure of the well. The fire was killed within an hour after the crane swung the water line into position.

Preparations had been made to dig a shaft and tap the well below the surface after previous attempts to kill the flames with nitro and also with carbondioxide had failed. The steam shovel had been moved in to start work on the shaft when Barney Carter, Ranger operator and contractor, and H. L. Patton, teaming contractor, collaborated in devising a tapered water nozzle to be dropped into the tubing, and force water into the well with mud hog pumps operating under heavy pressure. The crane on the steam shovel was stripped of its surplus equipment, and a four-inch water line attached. J. W. Crowder, partner of Patton in the teaming business, had experience in handling steam shovels and took part in the operation. A local welding shop turned out a pointed water spout to be hooked up with the water line, and reduced to a sharp point through a series of nipples in order to penetrate the top of the 2½-inch tubing. Perforations were made in this spout in order to prevent the heat from the flames melting the tool. In addition to flowing through the tubing the well was producing oil through the flow lines leading off from the 6⅝-inch casing, or oil string. Sufficient pressure was enlisted to reverse the stream of fluid in the tubing, thereby causing the water to return to the surface with the oil outside the tubing. A cloud of steam resulted from this mixture, and the fire ceased.

Three lives were lost when Eaton 5 caught fire, including Paul Vitek, trustee for the many stockholders owning stock in the lease.



The above map showing a major portion of the Joiner area illustrates the extent of dead and pumping wells.

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Two Mirando District Oil Purchases Total $402,000

San Antonio, Texas—Two oil deals in the Mirando district are included in the largest single week's oil trading in South Texas this year. The deals involved a total consideration of $402,000.

Rio Grande Oil Company of Los Angeles paid $224,000 for 1120 acres and one producing gas well in the district.

The purchase was made in San Antonio from Harry L. Fansler and associates. It is one of the largest deals in South Texas this year.

The acreage involved, owned by Henne, Winch and Fansler, consists of 480 acres in Survey 285, together with one gas well, and 640 acres in Survey 286, all located in the Martinez extension of the Jennings pool of Zapata County. Drilling contract calls for the beginning of operations during August.

Charles J. Alworth, oil operator and lease-holder of Laredo, has negotiated four deals for Zapata County oil acreage amounting to $178,000. One of the deals already has been closed.

All the acreage is located on the M. Garza lands on the Zorro ranch of Las Comitas grant of Zapata County in the Jennings Field. The deal closed is that whereby Alworth sold to E. K. Bateman et al, 80 acres, being blocks 29 and 32. The consideration was $24,000, of which part is cash and part out of one-quarter production.

In addition Alworth is preparing contracts covering blocks 30, 31, 40 and 105, with a total of 360 acres for a consideration of $81,000. Also blocks 33, 36, 37 and 39, having a total of 200 acres, for a consideration of $45,000, and blocks 13 and 18 with a total of 80 acres, for a consideration of $18,000.

The total consideration of $178,000 is coupled with provisions for drilling operations on each tract, part of the consideration being cash and part out of production.

Witherspoon Takes Over 1370 Acre Unitized Block

San Antonio, Texas—Witherspoon Oil Company has taken over the 1370-acre unitized block 11 miles east of San Antonio, which includes a Taylor marl pool, and is launching a rather extensive development campaign. The pool was discovered October 16, 1930, but has been receiving only little development.

Two new locations have been announced following the completion of a small producer by this concern the latter part of July. The producer, Ramzinski 1, which made 10 barrels from 1379-88 feet, extended the producing area ½ mile to the southwest.

The two locations are Knapick 1 and Anoil 1, both to be drilled immediately. The new producer as well as the new locations are on the J. W. Rialls survey.

The pool was discovered by Penn Oil Company on its first attempt, following completion on the 1370-acre unit block, a portion of a 10,000-acre block shared by Penn Oil Company and Sun Oil Company. Beside these two operators, Magnolia Petroleum Company, Witherspoon Oil Company, Jake Jarmon and J. D. Collett participated in the unit block.

According to C. L. Witherspoon, no cash was involved in the transaction, the property being taken over on a development basis only.

Test in Welder Gas Field is Abandoned

San Antonio, Texas.—Welder Oil Corporation's Welder 1, located in the Welder gas field, San Patricio County, has been abandoned at 3704 feet after testing a little gas and salt water at 3700 feet. The well, the first to be drilled since the discovery, is 1500 feet south and 800 feet east of the original producer.

Aransas Oil Company's Welder 1, completed for 30,000,000 cubic feet of gas through a one-fourth-inch choke from 3653-63 feet, opened a new field in that county late in April. The well is located in the E. Portillo Survey, five miles northeast of Sinton.

Another test drilling in the area is Jacob, Buzzini & Pickett's Baldwin 2, 3½ miles south of the Welder gasser in the T. Amarro Survey, which has set surface casing at 300 feet.

The situation does not look so bright for production to the south of the Welder producer inasmuch as the salt water well just completed cuts off the trend to the southeast and Houston Gulf Gas Company's Welder 3, drilled more than one year ago, cuts off the production to the southwest. The latter well is located 500 feet southwest of the producer.

In the White Point field, also in San Patricio County, United Production Company's Mayfield has been abandoned at 3283 feet as a dry hole.

Plug Back Goliad County Well to Avoid Salt Water

San Antonio, Texas.—After coring 10 feet deeper, Neuhaus Drilling Company's Pettus 1, Goliad County, will be plugged back in an effort to cut off the flow of salt water. The well recently was completed at a depth of 4298 feet as a small oil producer, opening the second pool in Goliad County. The well was sunk 10 feet deeper, to 4308 feet, the core showing sand and shale the remainder of the distance.

The well will be plugged back to 4288 feet, just below the sand at 4282-87 feet, from which the most of the production is believed to be coming. Shale and sand was encountered the remainder of the distance to the present total depth.

This test was completed July 25, flowing 110 barrels of fluid, 60 per cent salt water, through a one-fourth-inch choke, making 10,000,000 cubic feet of gas. It registered 800 pounds pressure on the casing and 420 pounds on the tubing.

In checking the log of the well, the pay is credited with being encountered 80 feet higher than the actual drilling report. This is accounted for in the fact that the well has a 11° crooked hole.

Darst Creek Allowable Remains 20,000 Barrels

San Antonio, Texas.—A decline of 6632 barrels daily in the Darst Creek field, Guadalupe County, was reported August 1, as compared with July 1. Gauge of wells during an eight-hour period showed the 258 wells to have a potential production of 126,699 barrels daily, according to Umpire H. H. Fitzpatrick.

The field will continue to produce 20,000 barrels daily based on .151984 per cent of the aggregate.

The report which is schedule number 28 for the field is as follows:

Company—	No. Wells	Total Potential	Allowable
Abercrombie and Harrison	5	3,236	492
Cranfill and Reynolds	1	85	85
Empire Gas & Fuel Company	8	1,769	349
Gulf Production Company	52	28,183	4,349
Humble Oil & Refining Company	48	24,195	3,676
Louisiana Oil Refining Corporation	17	9,248	1,488
Magnolia Petroleum Company	48	12,138	1,969
Penn Oil Company	1	45	45
Stroube & Stroube	1	95	95
Sun Oil Company	15	14,046	2,147
Texas-Humble et al	1	667	101
The Texas Company	53	16,133	4,883
L. C. Turman	2	....	....
Trinity Drillers	3	679	141
H. H. Weinert "A"	1	95	95
H. H. Weinert "B"	1	30	30
H. H. Weinert "C"	1	55	55
Field total	258	126,699	20,000

John F. Camp is preparing to spud his Sue Denman 1 in the William Arrington Survey, three-fourths of a mile southwest of the field. This is the first active operation in the vicinity of the field in several months.

Farther south, across the Guadalupe River, Adams Lysles North and Walton's A. Zobrowoski 1 is still shut down. The well has been flowing about eight barrels of oil daily from the Austin chalk at 2180-2212 feet, since it was brought in June 28. The well is in the J. B. Clements Survey.

Location Made for Offset In New Pool Near Pettus

San Antonio, Texas—Location has been made for the first offset well to be drilled in the new pool one mile southwest of the Pettus townsite recently opened by J. M. Davis et al's Ray 1 discovery. It is the T. B. Slick estate's Ray 1, 300 feet from the west line and 150 feet from the south line in the southwestern corner of the George A. Ray 159.36-acre tract in the George A. Kerr survey.

The Davis well established a new trend when it was completed recently for between 700 and 800 barrels daily, from a sand at 3920-25.

The offset probably will not be drilled immediately since Da-Mac Oil Corporation, a new company which has taken over the Davis well, has pinched in the flow to around 100 barrels daily. It has been flowing at the rate of 300 barrels a day.

United Production Corporation's Ray 39, in the northeast extension area of the Pettus discovery field, was drilling shale and lime at 2558 feet. Cosden Oil Company and Rowan and Tong's Freeland 2, one-half mile north of the Cosden production area, was last reported standing at 4294 feet.

Victoria County Still Center Of South Texas Drilling Work

San Antonio, Texas—Victoria County still holds the spotlight in South Texas activity, additional gas producing horizons being opened by the drill.

The latest well to attract attention is The Texas Company's McFadden 3, which found a sand at 3010-16 feet, testing 800 pounds pressure through a 3/8 inch choke. The tester slipped 15 feet, indicating an even greater pressure. The same well tested 800 pounds in a sand at 2048 feet.

This test is located 2675 feet north and 30 degrees west of McFadden 2, which was drilled into a gas sand at 2005-25 feet unexpectedly in February and ran wild several days. The well showed about 4000 barrels of fresh water with the gas flow. The McFadden 3 is in the northeast corner of the John M. Rine survey. It is four miles west of the McFadden field.

So far, The Texas Company's well has not reached horizons from which wells are producing in the McFadden or Slick gas fields. The Slick field has one producer at slightly below 3500 feet, while the other field has production at 3750 feet.

Another test is being started in the main McFadden field. It is the United Production Company's 5-A, 2800 feet northeast of the company's 4-A, which recently was completed as a large gasser. The exact location is 4250 feet north along an extension of the east line of the C. L. Mann survey.

The only other Victoria County operation at this time is Houston Oil Company's Konrad 1, which is making hole at 4785 feet. The well is on what is known as the Beck Salt Dome in the T. & N. O. survey, north of the town of Victoria.

Several Deep Horizon Wells At Refugio Near Completion

San Antonio, Texas—Several wells are in process of completion in the Refugio field's deep horizon. Moody-Seagraves Producing Company was swabbing O'Connor 4, drilled deeper from 5456 feet. It has the sand at 6426-33 feet with the total depth at 6435 feet. The 5 3/16 inch casing is set at 6425 feet. United Production Company has milled out the casing and is attempting to complete O'Brien 6, which has the sand at 6438-51 feet with 5 3/16 inch casing set at 6438 feet.

Another big producer seems probable in the 5800-foot level of the field as United Production Company prepares to complete its J. W. Fox 1. The well showed 1100 feet of oil, 150 pounds pressure and no water in 10 minutes on a drill stem test at 5865-72 feet and casing has been set. It is now waiting on cement. The United's other well in the field is the M. F. Lambert, which is drilling at 2935 feet.

Gulf Coast Drilling Company apparently missed the deep sands in its Lambert 1, which is drilling at 6520 in sticky blue shale. Houston Oil Company's Pratt, Hewitt-Rooke 6 has been having considerable trouble in trying to complete from the sand at 3694-3704 feet. Mission Drilling Company is coring for the deep sand in its O'Brien 1, a workover. The well originally was completed at 6449 feet, but was whipstocked back to 5000 feet and sidetracked. Pearson Properties' Ryals 3 has been killed at 5488 feet and is being deepened to the deeper levels.

Gulf Coast Field Developments

JACK LOGAN, ***Staff Representative, Houston, Texas***

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Four Tests Abandoned In Southern Louisiana

Houston.—One test each for the parishes of Calcasieu, St. Laundry, St. Martin and Terrebonne, all in the Louisiana Gulf Coast territory, was listed as abandoned during the past week.

Vacuum Oil Company's State 7, in the Lockport district of Calcasieu Parish, was abandoned this week at 6770 feet after having been drilling since early in March.

Two of the abandonments listed were projects of The Texas Company. In St. Landry Parish, this company abandoned Botney Bay 10 at 4190 feet after having obtained a showing of cut oil. Top of the oil sand in Botney Bay 10 was 4160 feet. The well is in Section 4, Township 6 south, Range 5 east. The other abandonment of The Texas Company was its L. L. E. Four Isle 5 in the Four Isle Bayou district of Terrebinne Parish, which was abandoned in salt at 1510 feet.

In St. Martin Parish, Federal Petroleum Company, which shut down its Daugaureaux 1 in July, posted that well as abandoned this week. Daugaureaux 1, located in Section 140, Township 9s, Range 5e, last logged shale at 5010 feet.

Two South Louisiana Tests Reach Interesting Depths

Houston.—Two wildcat wells in Louisiana's Gulf Coast have penetrated to depths which render them interesting. In Cameron Parish, Magnolia Petroleum Company's Sweet Lake 2 is drilling in shale below 7520 feet, having found nothing of commercial importance to that depth. In Vermilion Parish, Pure Oil Company's Alliance Trust Company 1, located in the Gueydan district, is drilling in hard sandy lime and calcite at 6095 feet, at which depth the formation cut a negligible amount of oil in an ether test.

Markham Producer Yields 500 Barrels Initial Oil

Houston.—E. M. Hamill's Myers 1 in the Markham district of Matagorda County, Texas, was completed for 500 barrels initial production from 3265 feet this week. Myers 1 set 23 feet of 4½-inch screen on bottom to obtain the initial yield. The well is flowing through a quarter-inch choke, registering a pressure of 475 pounds. Corrected gravity of the oil is 27.5.

Nacogdoches County Deep Test Is Shut Down

Houston. — Benedum-Trees Oil Company's Conkrite 1, deep wildcat test in Nacogdoches County is shut down in shale at 5485 feet after having been reported last week as coring at 5135 feet.

Conkrite 1, which is located one mile south of Chireno in the K. A. Chireno Survey, had been closely watched for geological revelations. The well recorded various strata of chalk, but nothing of commercial importance.

High Island Well's Initial Production Is 700 Barrels

Houston. — Yount-Lee Oil Company, more than once made conspicuous in the Gulf Coast country by overcoming unusual production obstacles, broght in Cade 21 at High Island, Galveston County, for an initial production of 700 barrels of pipe line oil last week.

Cade 21 is located 150 feet west of Cade 17, on a lease the commercial possibilities of which have been discounted by quite a few men of good judgment who at one time or another considered its development.

While the completion depth of Cade 21 was 5070 feet, the well recorded showings of oil sand at 4320 feet and 4408 feet.

Barbers Hill Producer Good for 1600 Barrels

Houston.—Humphreys Corporation this week completed its Fitzgerald-Meadows 1 at Barbers Hill field, Chambers County, for an initial production gauged at 1600 barrels of 26.3 gravity oil. Total depth of the well is 4231 feet, with 64 feet of five-inch O.D. Layne and Bowler bronze screen on bottom.

Fitzgerald-Meadows 1, which gauged a pressure of 415 pounds, is flowing through a 1½-inch choke. It is located 50 feet south and 100 feet east of the northwest corner of strip No. 10 in the Fitzgerald-Meadows property.

Esperson Deep Test Is Temporarily Abandoned

Houston.—Davis 7, deep test of Cranfill-Reynolds on the Esperson dome, Liberty County, has been temporarily abandoned in shale at 6300 feet, where 9⅞-inch casing was set. A string of 12½-inch casing was set in this test at 1330 feet. No oil sand has been encountered to the present depth.

New Nacogdoches County Wildcat Shut Down at 82 Feet

Houston.—Greer 1 of Taylor and Vaughn, new wildcat project for Nacogdoches County, has spudded and shut down at 82 feet. Greer 1 is located one mile north of Appleby and 10 miles northeast of Nacogdoches in a 65-acre tract of the M. G. Herrera Survey.

San Antonio Petroleum Club Has Attractive New Quarters

San Antonio, Texas.—A new attractive home has been prepared by the 100 members of the San Antonio Petroleum Club on the fourth floor of the Alamo National building, Commerce and St. Mary's Streets. The club was moved from the Milam building the past week.

Frank Zoch is president of the club; F. L. Thomson and Ike S. Kampmann, vice presidents; and C. A. Campbell, secretary and treasurer.

The new location provides a specious roof garden, connected with the dining room by large French doors.

Gulf Coast Scout Book Gives Vital Oil Information on Area

A vast amount of vital information has been presented by the Texas Gulf Coast Oil Scouts Association and the South Louisiana Oil Scouts Association in their recent publication, "Oil and Sulphur Development in the Texas and Louisiana Gulf Coast Salt Dome Region."

This publication, Bulletin Number One (1930) of the above association, is an attractive 128-page book, illustrated with numerous maps, drawings, cross-sections, photographs, and tables, and containing a summary of the pertinent facts relative to the discovery and development through 1930 on all salt domes and oil fields in the Texas and Louisiana Gulf Coast region.

An index map carried as an insert, shows all the domes and fields in the coastal country; and brief histories are given of all the known domes and fields in the region. Production and development are treated for both the Texas and Louisiana divisions of the Gulf Coast, the data presented under these headings including drilling and completion tables for 1930, production by fields, and special condensed tabulations showing historical and development data for ready reference.

Facilities for transporting, storing and refining coastal crude are summed up in special tabulations and lists, and there are articles discussing the geology of the Gulf Coast area and geophysics as employed in the salt dome country.

Aside from the above comprehensive data there are special articles on sulphur mining and the sulphur industry in the Gulf Coast, and on Clay Creek, Barbers Hill, Raccoon Bend, Sugarland, Old Hackberry and East Hackberry, relatively new producing fields of the coastal region. Well surveying as practiced in the coastal fields is also given special discussion.

The above reviewed bulletin was edited by G. C. Francisco, Jr., and Harry M. Sample, Houston, members of the Texas Gulf Coast Oil Scouts Association. It was printed by Gulf Publishing Company of Houston. The publication is copyrighted, and copies of it may be secured at $3.50 each from the Texas Gulf Coast Oil Scouts Association, 1418 Esperson building, Houston, Texas.

Prepare for First Test Of Rapides Parish Block

Shreveport.—Pelican Natural Gas Company (S. D. Hunter and Associates) started building derrick Saturday, August 1, for the first test on a 90,000 acre block in southwest Rapides Parish, 35 miles southwest of Alexandria in the central part of Louisiana. The test is Long Bell Lumber Company 1, 330 feet north and east of center of Section 3-1n-3w. The contract calls for a 2500-foot test. This part of Louisiana is watched with considerable interest as much geophysical and geological work was done in that general area and in fact practically across the entire state following completion last year of a shallow gasser at the 1300-foot level in the Jackson formation by Glassell and associates in Concordia Parish. This area is between the Angelina-Caldwell Flexure and the Gulf Coastal area of South Louisiana.

Casper, Wyo.—Midwest Refining Company's well on Midway dome structure is looking like a producer from the Muddy sand, having encountered such production of oil and gas that it blew tools up into the hole about half way, where they bridged. Well is being cleaned out and production test will be made next week.

▼ NEW MEXICO - ROCKY MOUNTAIN AREA ▼

Sulfur Water Appears in Three Hobbs Field Wells

Hobbs, New Mexico.—Appearance of sulfur water in three flowing wells on the west flank of the Hobbs field may result in some action being taken in the movement sponsored by a minority group of operators to have the production allowance of the field reduced during the low-price period.

Humble Oil & Refining Company's State 3-A, Section 25-18s-37e, began showing water on July 21, and before the end of the month had increased to 60 per cent water. This well is producing from lime at 4150-4220 feet, with a surface elevation of 3666 feet. It was rated at 4075 barrels potential on last official gauge by Umpire C. G. Staley, and received a daily quota of 170 barrels.

Midwest Refining Company's State 11, Section 9-19s-38e, also is showing water in lime at 4090-4175 feet, and has pulled tubing to plug back about 40 feet. Shell Petroleum Corporation is also credited with having a well on the west side that has been plugged back after showing water.

Production of the field is restricted to 37,047 barrels daily from 144 wells having a combined estimated potential of 1,156,834 barrels daily.

Cheyenne, Wyo.—Acting Governor A. M. Clark, of Wyoming has wired to President Hoover asking that the federal government shut down all wells on federal-owned land in co-operation with Wyoming's project of shutting down all wells on state-owned properties. Shutdown would last only until the various crude oil purchasing agencies would establish a minimum price of $1 per barrel for crude petroleum at the wells in the various light oil fields in Wyoming.

Douglas, Wyo.—Otto Olston and Benzol Corporation of Chicago have spudded in a joint test on the Boxelder Basin structure, a few miles southeast of Glenrock, on a location spotted on the Careyhurst ranch which belongs to United States Senator Robert D. Carey. Well is a test to the Embar, expected at 600 to 700 feet. The test is the first of four which are to be drilled on the structure this summer, one of which will be a deep test.

Lusk, Wyo.—An interesting wildcat test has been started in the West Mule Creek area in Niobrara County, northeastern Wyoming, by Globe Petroleum Corporation, Interstate Oil & Refining Company, and Fall River Royalties & Producers, jointly. Test is started for the Mississippian limes, expected around 3000 feet. This is a deeper horizon than has ever been tested before in this area.

Cody, Wyo.—The Texas Company refinery at Cody, Wyoming, was shut down August 1 for an indefinite period, and no more crude from the Oregon Basin field will be refined here until, perhaps, next year when the company may turn out some road oil. The shutdown is traced directly to the government's price on its royalty oil of 60 cents per barrel, a price which is prohibitive under the existing conditions in the industry. Most of the personnel of the refinery will be moved to Casper, although some officials will be sent to Amarillo and Fort Worth.

LOUISIANA-ARKANSAS

Smackover's First 5000-Foot Test Is Commercial Failure

Shreveport. — Unless the first 5000-foot test for the Smackover, Arkansas, field uncovers an oil or gas producing sand below 4964 feet or is taken below the 5000-foot level, it appeared late last week that this test, from a commercial standpoint will be a failure. Late in the week Lion Oil Refining Company and associates' Guy P. Hayes A-9, SW NE Section 4-16-15, Union County, was reaming to bottom at 4964 feet after ratholing to that depth. The formation was blue shale. Frequent salt water sand horizons have been encountered in this test below the last of the four producing horizons in the Smackover field, the latest being from 4858 to 4860 feet.

Negotiations are under way to enlist the aid of several major companies to furnish financial aid to continue the test to 6000 feet or possibly 7000 feet. Several salt water sand strata have been encountered since passing the level of the lowest of Smackover's oil producing sands at 2600-2700 feet, the latest salt water sand having been encountered at 4858-4860 feet.

McIver and associates abandoned Hattle 1, Section 1-20-26, a wildcat in LaFayette County, southwest Arkansas, as a dry hole at 3310 feet, in shale. Copenhaver and associates' Elliott 1, SE SE Section 11-15-17, Ouachita County, was also abandoned as a dry hole at 2210 feet. It had been shut down for several months after bailing dry, following setting of 6⅝-inch casing at 2190 feet.

Ohio Oil to Shut Down Haynesville Operations

Shreveport.—Ohio Oil Company, which operates more than half of the wells in the Haynesville Blossom sand producing field in Claiborne Parish, announced during the past week that it will shut down operations in that field September 1 unless the price of oil has advanced to or beyond 50 cents for oil of 40 gravity and above.

"We are unable to continue operations in Haynesville because of the low price of oil and the severance tax levied by the state of Louisiana," officials stated. The severance tax in Louisiana is predicated on a gravity basis and is 11 cents per barrel for 40 gravity and above. Haynesville's oil averages from 36 to 40 gravity. Its daily production under a successful repressuring project undertaken in that field last year, has been built up from approximately 3900 barrels to 5050 barrels. Ohio Oil Company, Louisiana Oil Refining Corporation and Reserve Petroleum Company are engaged in repressuring work in that area. Other operating companies in Haynesville, including the two latter, are expected to join in the shutdown.

Ohio Oil Company had asked for permission of landowners in the Haynesville field for the privilege of shutting down for a period of one year, provided the price of oil did not advance satisfactorily in the meantime. Landowners were told that the company, under the recent low schedule of prices, had been operating at a loss of $2000 daily in the Haynesville field.

Every well except one owned by Louisiana Oil Refining Corporation has been shut down in the shallow Bellevue field of Bossier Parish. This well makes 80 barrels daily. Standard Oil Company of Louisiana abandoned 16 wells in Bellevue during the past week. Gulf Refining Company abandoned four in Pine Island, Caddo Parish, and two in Bull Bayou, Red River Parish.

Five Locations announced For North Louisiana Area

Shreveport.—Five new locations were announced during the past week in North Louisiana, including the working over of an abandoned wildcat in Richland Parish. Two of the new locations were for outside tests in Zwolle, Sabine Parish. W. M. Coates has derrick up for Bowman-Hicks 1, NE SW Section 2-7-12. Bengail Oil Company has derrick pattern for Nulton 1, NW NE Section 1-7-13, in the recently opened one-mile southwest extension from the Zwolle townsite producing part of the field where there are now three producers.

Pyramid Oil & Gas Company made location for Breard 2, Section 10-18-16, Caddo Parish, a mile outside of the north edge of the shallow Greenwood gas field, where this company completed a gasser several months ago in the Tokio.

National Gas Company is rigging up to deepen Singletary 1, Section 20-18-7e, Richland Parish, Oak Ridge district, which was drilled to 897 feet several months ago by Richland Oil & Gas Company. Richland Operating Company made location for Baremore 1, Section 19-16-7e, Richland Parish.

MISSISSIPPI

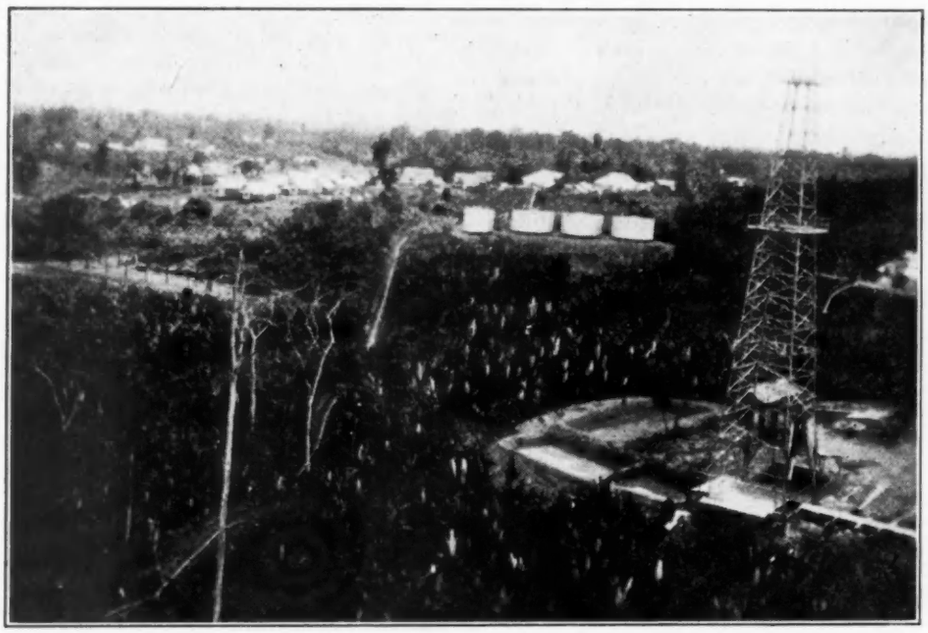
Jackson, Miss.—Ohio Oil Company late last week was running 6⅝-inch casing in Cantrell 1, NE NE Section 16-15-5e, Clay County, in North Mississippi, after getting a show of gas after penetrating 1½ feet of sand at 4477 feet; elevation is 270 feet. This test topped Paleozoic rock at 1385 feet.

In the discovery well in the Amory gas field in Monroe County, Mississippi, 30 miles to the northeast, the Paleozoic rock was topped at 193 feet. Amory's gas field is the nearest commercial production to the Ohio Oil Company's test. This company is said to have 150,000 acres checkerboarded in Monroe, Clay and adjoining counties.

Jackson, Miss.—Following on the heels of completion of one of the largest gas wells in the Jackson field, Union Drilling Company's Pate 1, NW SE Section 12-5-1e, Rankin County, late in the preceding week, two edge gassers, both in Hinds County were completed during the last week in the Jackson field. Both were of small capacity. Atkisson and associates' Downing & Rehfelt 1, NW NE Section 27-6-1e, on the north edge of the field, was completed at 2474 feet, making an estimated 10,000,000 feet of gas. In SE NW Section 2-5-1e, Hopkins Gas Company's Ridgeway 1 was completed at 2576 feet, making an estimated gas yield of 1,000,000 cubic feet.

Jackson, Miss.—Chester County Oil and Gas Company's Montgomery 1, in Decatur County, Southwest Tennessee, which had been shut down for several weeks due to illness of the driller, resumed making hole during the last week and late in the week was drilling sandy lime at 2296 feet. Cores at this depth showed oil reaction under chloroform as cores at several levels below 2200 feet in this test have done.

INTERNATIONAL PETROLEUM
IN REVIEW



Pendopo Camp of the Nederlandsche Koloniale Petroleum Maatschappij, in Southern Sumatra, D. E. I.

Colon's Production Decreases Slightly Maracaibo, Venezuela.—Production of Colon Development Company, Ltd., operating in the Colon district, south of Maracaibo Lake, in Venezuela, averaged 20,450 barrels per day during the week ended July 24, 1931. This compares with a daily average of 21,561 barrels during the week preceding.

New German Company Organized Berlin, Germany.—A German company has been organized with the title of Ost Oel Gesellschaft, to which the properties in the Hannover district recently acquired by Royal Dutch Shell group will be entrusted for exploitation and development.

Italy Gets Iraq Concession London, England.—It is reported in the European press that the Italian government has claimed from the government of Iraq the right to make exploration in search of oil in the territory west of the Tigris, recently thrown open for development following the definite fixing of the limits of Iraq Petroleum Company's concession east of that river.

Mussolini's government is said to have demanded this right of exploitation on the ground of Italy's participation in the World War. The right of transporting oil through the pipe lines of Iraq Petroleum Company is also claimed.

Tocuyo Produces 500 Barrels Daily Maracaibo, Venezuela. — Production of Tocuyo Oilfields, Ltd., operating on the north coast of Venezuela, averaged approximately 500 barrels per day during the month of June, 1931.

A Few Decades Will See a Serious Oil Shortage "To one looking even a short time ahead,—"many of the greatest fields in the Mid-Continent region are developed in the lowest beds that are known to contain oil. Drilling within the past 10 years has developed vast reserves in these deep beds, but the drill has encountered and often drilled through the lowest or oldest beds that contain oil anywhere in the world. No geologic work, however skillful, and no improvements in drilling methods, however revolutionary, will make it possible to develop oil below the beds that are now producing oil in many of the greatest fields in Oklahoma, Kansas, and Texas. New fields may be developed on other structures, but the future production of these deep fields can come only from the deposits that are now known. A list of the fields that have been fully developed or explored and in which the deepest possible reservoir rocks have been penetrated is an impressive exhibit. Although new fields are being developed, the production in many of the greatest fields is trending downward away from the peak. Meanwhile, the use of oil products, stimulated by very low prices, is increasing. Even admitting further improvement in technology, it is a rational conclusion that a few decades will see a serious shortage of oil, especially in North America where development and exhaustion have gone ahead more rapidly than in other continents."

Prefatory statement by Dr. William Harvey Emmons, professor and head of Department of Geology and Mineralogy, University of Minnesota; director, Minnesota Geological Survey; formerly geologist, United States Geological Survey; author of Geology of Petroleum, Second Edition

(1931), published by McGraw-Hill Book Company, Inc., New York and London; price $6.00 (30 shillings).

Dr. Emmons' premise is that the over-supply of petroleum immediately available has resulted from "(1) a better use of geologic data, (2) the use of better drilling machinery and of improved cutting tools and, especially, the development of heavier and better rotary systems which make it possible to drill deeper, and (3) economic conditions favorable to the profitable search for new oil fields."

The reader is thus induced to ask himself if there is any assurance that these factors will continue to operate with the same force in the future as in the past.

Dr. Emmons' book is designed as a manual as well as a text-book; and essentially all of the world's oil fields are briefly treated, with references to the important literature. Indeed, it might be said that the bibliographical material which it contains is worth the entire cost of the book.

His second revision will command a place in the library of every geologist,—and of many practical men,—aspiring to thorough knowledge of the industry and of the factors affecting it, at home and abroad. Its first 10 chapters are devoted to discussion of the theory and application of the science of petroleum geology. The remaining 12 chapters, in which is executed the idea of the petroleum manual, are devoted to the occurrence of oil throughout the world and are equally divided between foreign and domestic fields. Few other published volumes are so rich in maps and other data pertaining to domestic and foreign oil fields.

The Oil Weekly Opens New York Editorial Office

THE OIL WEEKLY announces opening of a New York editorial office at 250 Park Avenue, Room 324, with Roy E. Leigh, associate editor, in charge.

Mr. Leigh, the first oil writer to make a complete survey of the world petroleum situation, having personally visited every important oil area in the world, recently returned from the second leg of his trip which covered Europe, Asia and the East Indies.

ROY E. LEIGH

Early in 1929 THE OIL WEEKLY undertook the presentation of facts, statistics and articles covering activities in oil fields throughout the world, for the benefit of operators as well as manufacturers of oil field equipment. Roy E. Leigh was chosen as foreign correspondent and associate editor, for the consummation of this project.

During 1929 Mr. Leigh completed the first leg of this projected round-the-world tour, covering every field in South America, employing every known means of transportation from burro to airplane, gathering material for articles which appeared regularly in THE OIL WEEKLY and in a Special South American Issue, published December 13, 1929. These several articles covered material gathered in Argentine, Trinidad, Uruguay, Bolivia, Peru, Ecuador, Colombia, Brazil and Venezuela.

In January, 1930, he started on the second leg of his round-the-world trip, with London the first stop. Subsequently his itinerary took him through Europe, Asia and the East Indies, terminating in Japan, from whence he returned to the United States and the home office at Houston, to prepare for the opening of the New York editorial office.

In his new location Mr. Leigh will continue to furnish articles on the technical and specialized branches of the industry as practiced in foreign fields, and will serve as contact with the New York representatives of oil companies operating in foreign fields as well as equipment companies selling abroad.

Argentine Bureau Recommends Oil Tariff

Buenos Aires, Argentine.—Recommendations favoring a 300 per cent increase in existing import duties on gasoline, kerosene, and crude oil have been filed with the Argentine government by the National Bureau of Petroleum Production. It is argued in favor of this increase, which is intended to be prohibitive, that local refining capacity, including that of the governmental agency, Yacimientos Petroliferos Fiscales, is sufficient to fill the country's requirements of petroleum products; and that such a duty is needed in order to encourage the expansion of domestic crude production.

This recommendation seems to conflict with the current policy of the Provisional Government, in that the tariff on crude oil was reduced by recent decree, presumably because of the inadequacy of domestic crude production.

Persia Restricts Russian Imports

Tehran, Persia.—The Persian government has issued a decree limiting the importation of Soviet oils. The Caspian provinces of the kingdom are more or less dependent on Russian petroleum products imported from Baku, these provinces being more accessible from that source than from Persian fields in the vicinity of Masjidi-Suleiman. In view of this fact, and of the inaccessibility of the northern markets from the south, future importation of Russian oils has not been prohibited but has been limited to a value of something less than $7,500,000 per annum.

The Persian market heretofore has been divided on a geographical basis between Persazneft, a subsidiary of Soviet Naphtha Syndicate, which supplies the northern provinces from Baku fields, and Anglo-Persian Oil Company, concessionnaire of the Persian government which supplied the Persian Gulf region and southern provinces from its refinery at Abadan.

A few years ago, however, Anglo-Persian Oil Company was virtually forced to establish distribution outlets in the Caspian provinces in order to supply markets left destitute of oil as a result of the temporary closure of the Russo-Persian frontier. Since that time, Anglo-Persian and Persazneft have operated in competition, insofar as the markets of Teheran and vicinity are concerned.

This restriction imposed by the Persian government doubtless was made to protect its own oil royalties from Anglo-Persian production as well as further to limit the operations of Soviet agencies in the manipulation of Persian exchange.

Completions for Past Week in U. S. Fields

▼ ▼ ▼

TEXAS

CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JOINER FIELD—		
T. C. Adams et al, J. E. Arnold (25-ac) 1	3500	3682
Pat Armstrong & Pitts, E. Cooper (3-ac) 1	1200	3608
Arrow O&G Co., E. S. Thrash (3½-ac) 1	4000	3800
C. & P. Oil Co., M. L. Thompson 1	10,000	3740
Clopton & Hanbury, Thompson 1	6000	3747
Devonian Oil Co.-Barnsdall Oil Co., Milstead 4	3000	3748
C. A. Everts Drlg. Co. et al, J. E. Ross 1	*	3381
Gulf Prod. Co., W. L. Murphy 2	5000	3787
Humble O&R Co., A. D. Blackwell 3	5000	3707
Sol Dennis 1	8500	3750
Ida Holt 1-B	6000	3773
M. Kangerga (116-ac) 11	2500	3702
J. R. Lindsey (45-ac) 1	12,000	3805
S. A. Plowman (228-ac) 8	6000	3706
W. L. Price (200-ac) 2	9500	3798
R. E. L. Silvey (209-ac) 1-B	5500	3739
Heywood White (49-ac) 1-A	8000	3786
Heywood White (134-ac) 1-B	8100	3696
H. L. Hunt et al, O. R. Holt (11½-ac) 1	5500	3835
B. F. Maxwell 1	7500	3720
Jackson-Wise & Snedden, J. B. Wilson (40-ac) 2	5600	3660
L. B. Keith et al, T. O. Wright (1½-ac) 1	3000	3735
John E. Mabee, Inc., et al, Maxwell 1	250	3645
Magnolia Pet. Co., J. R. Wright 4	10,000	3673
J. R. Wright 5	8000	3672
Sinclair O&G Co., A. S. Jarvis 2-A	4000	3690
A. S. Jarvis 3-A	4000	3690
A. S. Jarvis 4-B	8500	3702
W. D. Kinney 6	4000	3666
W. D .Kiney 7	4500	3644
Mayfield 1-A	8000	3637
J. B. Wilson 2	9000	3675
Stanolind O&G Co., Grissom 1	5000	3683
D. W. O'Quinn 2	4800	3811
Strickland O&G Co., Blackwell 3	11,000	3703
E. M. Thomason et al, M. L. Thompson (10-ac) 1	3500	3731
R. W. Vierson et al, O. H. Grissom (16-ac) 1	10,000	3688
KILGORE FIELD—		
Atlantic Oil Prod. Co.-Byrd & Frost, Inc., Whaley (74-ac) 1	8000	3631
J. S. Abercrombie-Harrison Oil Co., Brightwell (30-ac) 2	8000	3601
Bell & Graddy, Inc., Daniel-George 1	5000	3580
East Texas Ref. Co., S. B. Wills 2	9000	3587
Gulf Prod. Co. et al, C. E. Christian 1		
H. C. Alexander 1	7000	3526
A. Spear 4	8000	3553
T. C. Reeves 1	10,000	
A. Spear 6	8500	3622
A. Spear 7	5500	3578
M. R. Terrell 1	3500	3609
Houston Oil Co., E. Thompson (39-ac) 2	7500	3668
Humble O&R Co., L. D. Crim 27	10,000	3602
L. D. Crim 32	8000	3650
L. D. Crim 33	8500	3659
L. D. Crim 34	6500	3610
S. S. Laird 6-B	7000	3637
S. S. Laird 7-B	5500	3622
S. S. Laird 12-A	1500	3729
Magnolia Pet. Co., J. C. Bradberry 5	10,000	3677
Johnson-Wyche & Farborough Oil Co., J. V. Borders (3-ac) 1	750	3654
C. H. Lyons et al, Shoto Ray 1	9500	3628
Pelican Nat'l Gas Co., Spear-Laird (92-ac) 1	9000	3623

For Tabulation and Comparison See Market Section

Company, Well and Location	Initial Production Bbls.	Depth
A. Plummer-Mason et al, J. R. Beall 1	5000	3702
Prairie O&G Co., W. B. Walker (80-ac) 1	12,000	3695
Selby O&G Co., M. T. Cole (80-ac) 1	7500	3567
Shell Pet. Corp., G. W. Bates 1	8000	3618
W. W. Elder 7	5000	3602
W. P. Moore 1	7000	3726
J. Ben Watson 10	15,000	3573
Sinclair O&G Co., M. T. Cole 6	3500	3593
M. T. Cole 8	1500	3568
A. A. King 3-A Tract No. 1	5600	3503
A. A. King 4-A, Tract No. 1	7500	3513
A. A. King 5-A, Tract No. 1	7500	3517
Southern Crude Oil Pur. Co. Christian 1	5000	3676
The Texas Co., H. T. Elder 2	8500	3683
Tidal Oil Co. (was Mid-Kansas O& G Co.) J. R. Beall 2	7000	3649
J. R. Beall 4	6500	3645
Bivens 2	6000	3596
J. M. Blackman 5	8000	3655
LONGVIEW FIELD—		
Cranfill-Reynolds Co., Barnswell 1	15,000	3491
Empire Gas & Fuel Co., Rogers 1	10,000	3644
Fain-McGaha Oil Corp., C. C. Clements 2	12,000	3615
Grisham-Hunter Corp., T&P Fee 2, Gladewater Blk.	10,000	3604
Gulf Prod. Co., Bozeman 1	9500	3611
Hamill & Smith, Everett-Hill 1	8000	3524
Humble O&R Co., W. W. Holland (245-ac) 1	7500	3560
Magnolia Pet. Co., J. W. Free (28-ac) 2	6000	3630
J. H. Massie et al, J. Worr (36¼-ac) 1	15,000	3650
Oils, Inc., K. Moseley (15½-ac) 1	12,000	3491
Geo. L. Pace Pet. Corp., Anderson 1	12,000	3623
Prairie O&G Co., I. Isley 3	9000	3560
Rowan-Nichols Oil Co., B. C. Todd (28-ac) 1	10,000	3607
Sinclair O&G Co., M. Moncrief 5	6000	3597
M. Moncrief 6	8000	3581
Owens 1	5500	3596
J. R. Williams (82-ac) 2	10,000	3536
Sun Oil Co., V. L. Loden (27.3-ac) 1	10,000	3717
T. P. Coal & Oil Co., Fee (182-ac) 2	10,000	3609
Tidal Oil Co. (was Mid-Kansas O&G Co.), Jas. Moore 1	6500	3535
W. F. Turner et al, Alford Jones (54-ac) 3	8000	3665
Yount-Lee Oil Co., Hopkins 1	7500	3519
M. Jones 2	9000	3505
J. C. McKinley 2-B	8500	3651

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
MOORE COUNTY—		
Texas Interstate P. L. Co., A. R. Sneed (Sec. 33) 1	¶16	2655

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JACK COUNTY—		
Magnolia Pet. Co., Cook 1	*	3560

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
LOVING COUNTY—		
Grisham-Hunter Corp., D. P. Dean 1	*	4343

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
SAN PATRICIO COUNTY—		
United Prod. Co.'s Mayfield 1	*	3283
Welder Oil Co.'s Welder 1	*	3704

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Humphreys Corp., Fitzgerald Meadows 1	1600	4231
HIGH ISLAND—		
Yount Lee, Cade 1	700	5070

NORTHERN LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
OUACHITA PARISH (Monroe)—		
United Gas Pub. Serv. Co., Stevens 2, 36-21-3e	¶30½	2157

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
HINDS COUNTY (Jackson)—		
Atkisson et al, Downing & Rehfelt 1, 27-6-1e	¶1	2576
Hopkins Gas Co., Ridgeway 2, 2-5-1e	¶10	2474
RANKIN COUNTY (Jackson)—		
Union Drilling Co., Pate 1, 12-5-1e	¶49½	2393

CALIFORNIA

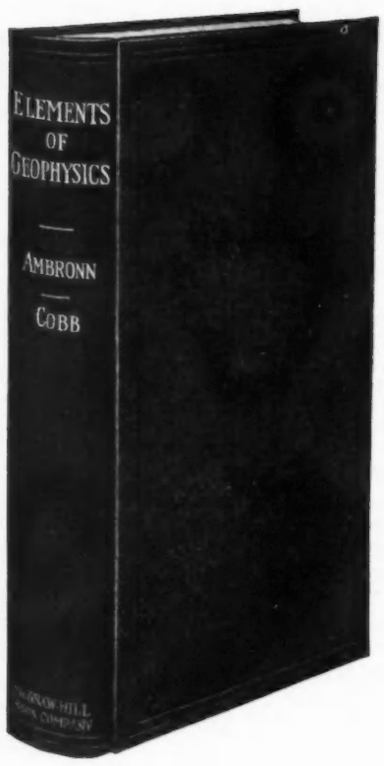
Company, Well and Location	Initial Production Bbls.	Depth
KETTLEMAN HILLS—		
Kettleman North Dome Association, Getty 8-6Q	9200	8026
Standard Oil Co., No. 34-29J, 29-21-17	29,000	8472
LONG BEACH—		
George Duty, Roco 1A	175	3957
PLAYA DEL REY—		
Ohio Oil Co., No. 1-2	1800	6342
Hampton & Co., No. 1	450	6385
SANTA FE SPRINGS—		
General Pet. Corp., S. F. 3	100	3845
SANTA BARBARA MESA—		
Palisades Pet. Corp., Meigs 3	250	2197

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CREEK COUNTY—		
Burton & Holmes, Barnett 1, ne c se nw 7-19-10e	¶½	2063
Hooker Bros., Briggs 1, nw c ne nw 36-19-8e	¶2	2177
C. O. Buckles, Conner 1, ne se nw 9-19-7e	*	2999
MUSKOGEE COUNTY—		
P. Boyle et al, Barnett 1, nw se nw 35-16-15e	¶1	1131
C. W. Brown, Smith 2, sw c ne nw sw 14-15-15e	*	812
OKFUSKEE COUNTY—		
C. Fleming et al, Fife 1, nw c ne nw 12-10-11e	*	2075
OKLAHOMA COUNTY—		
Wilcox and Diffie, Terminal 1, c s½ ne sw nw 3-11-3w	30,000	6355
Capital P&R, Refinery 1, c n½ se ne se 4-11-3w	10,000	6515
I. T. I. O., Stevens 1, ne c nw sw se, 15-11-3w	3500	6295
OKMULGEE COUNTY—		
Trident Oil Co., Harris 4, c e½ ne 1-14-14e	5	1582
PAYNE COUNTY—		
Hilton & Phillips, Workman 1, ne nw se 24-18-4e	*	3783
SEMINOLE COUNTY—		
Sinclair O&G, Phillips 10 (owd) nw se se 5-7-7e	125	3304
TULSA COUNTY—		
Deems et al, Grayson 1, se nw ne 18-19-14e	*	1345

Geophysical Exploration

for the Discovery of Minerals, Oil and Gas



An authoritative discussion of geophysical methods of exploration in mining and hydraulics, in the solution of water supply problems and as an auxiliary to geologic research. The book summarizes the scientific background of geophysics and describes exact methods of geophysical procedure.

Elements of Geophysics

By RICHARD AMBRONN

Gottinger

Translated by M. C. Cobb, M.A., Ph.D.

This is the first treatment in English of a subject of real and rapidly growing importance to the practical geologist, the petroleum geologist and the mining engineer.

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KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
GREENWOOD COUNTY—		
Gore & Tidal Oil, Davis 1, nw c se 6-24-12e	150	1723
Empire O&R et al, Hillman 3, sw ne ne 35-13-11e	65	1847
McPHERSON COUNTY—		
Sinclair O&G Morehouse 10, ne nw ne 4-21-3w (owd)	200	3341
McPherson O&G and Shell, Griffin 3, c se nw 14-19-2w	¶14½	2891
Decker 4, c ne se 11-19-2w	¶57	2913
Jones & Shell, Peterson 1, nw sw sw 7-20-1w	*	3456
Derby Oil Co. and The Texas Co., Flook 1, sw c 29-19-1w	*	3462
RUSSELL COUNTY—		
Liggett et al, Whitson 1, sw nw sw 16-11-15w	40	3184
STEVENS COUNTY—		
Texas Interstate Pipe Line Co., Geyer 1, c sw 2-33-38w	¶2-4/5	2560

EASTERN STATES

PENNSYLVANIA

GREENE COUNTY—		
Manufacturers Light & Heat Co., Griffith 2851	¶¼	3395
Dunn Marr Oil & Gas Co., Kerns 1	15	2234
WAYNE DUNDEE FIELD—		
Decker & Co., Hoover 1	¶2½	....
WASHINGTON COUNTY—		
M. Green & Co., Craig 1	¶¼	300

WEST VIRGINIA

BOONE COUNTY—		
Cameron Oil & Gas Co., Price & Co., 1	¶¼	....
CALHOUN COUNTY—		
Hope Natural Gas Co., Howell 6746	¶¼	2407
Park Bowser & Co., Wilson 2	¶½	1787
MONONGALIA COUNTY—		
Philadelphia Natural Gas Co., Conner 5402	8	3475
LINCOLN COUNTY—		
Woodyal Gas Co., Adkins 2	¶¼	1800

SOUTHEASTERN OHIO

WASHINGTON COUNTY—		
Massilon-Macksburg Oil Co., Adams & Co., 1	2	....

CENTRAL OHIO

ASHLAND COUNTY—		
Commonwealth Gas Corp., Witmer 1	*	2750
BELMONT COUNTY—		
John Jeffries & Co., Jefferies 1	¶2	968
HOLMES COUNTY—		
Lydic Oil & Gas Co., Ahank 7	¶¼	767
MEDINA COUNTY—		
Edson Sons Co., Frank 22	30	457
Yost 1	10	314
Yost 2	¶¼	268
Curtis & Eakens, Brown 5	20	397
MEIGS COUNTY—		
A. N. Bingle & Co., Thomas 4	*	1045
Joe Kiggins, Forrest 1	*	885
Ohio Fuel Gas Co., Whaley 3	¶¼	1536
STARK COUNTY—		
Stoltz Oil & Gas Co., Hatter 1	¶¾	4417
WAYNE COUNTY—		
L. Harpster, James 1	¶¼	383

INDIANA

GREENE COUNTY—		
Old Dominion Corp., Mager-Fisher 1	¶1	2030
PIKE COUNTY—		
Wiser Oil Co., Doidge 1	*	1190
H. A. Moore & Co., Craig 1	¶1	1156
Vernon Burden, Preston Hrs. 1	*	1169

ILLINOIS

CUMBERLAND COUNTY—		
Kemper & Payne, Steward 1	*	1042
EFFINGHAM COUNTY—		
Tillifer & Cramer, Ordner 1	*	2200
WABASH COUNTY—		
Coleman & Co., Liddle 1	*	1609

KENTUCKY

OHIO COUNTY—		
Hall & Garrison, Hammer 1	¶¼	....
McLEAN COUNTY—		
Creek Drilling Co., Morris 1	225	3200

MICHIGAN

CLARE COUNTY—		
McKay-Mercier Co., Bicknell 1	¶4¼	....

Permits Granted for New Wells

▼ ▼ ▼

For Tabulation and Comparison See Market Section

CALIFORNIA

KERN COUNTY—Graham-Loftus Oil Corp., Carmel 1, 20-27-22.

KETTLEMAN HILLS — Kettleman North Dome Association, No. 52, 2-22-17.

NEWPORT—Nuoil Co., No. 2, 29.6-10.

SANTA BARBARA COUNTY—The Ohio Oil Co., No. 1, 16-4-28.

OKLAHOMA

CREEK COUNTY — O. C. Baltzell et al, Land 1, sw c nw 12-18-12e.

MUSKOGEE COUNTY—H. L. Jolly et al, Brown 2, ne c 8-15-18e.

OKMULGEE COUNTY — Trident Oil Co., Harris 7, csl ne ne 1-14-14e.

TEXAS COUNTY—Western Production Co., Jackson 1, c sw, 1-3n-14ecm.

KANSAS

COWLEY COUNTY—Sooby et al, Bowman 2, cnl se 8-32-5e.

HARVEY COUNTY—Liggett et al, Walton 1, sw se ne 7-24-1e.

McPHERSON COUNTY—Gilmore Oil Co., et al, Blair 1, nw c ne, 28-19-1w; J. H. Reed et al, Keefer 1, nw c sw ne 21-19-1w; Derby Oil Co. and The Texas Co., Unruh 1, se se se, 26-19-2w; McPherson O&G Devel. Co., and Shell, Myers 4, "B", c sw se 14-19-2w; McPherson O&G Devel. and Shell, Fleming 3, c ne nw 11-19-2w.

MORRIS COUNTY—Allender et al, Wycoff 1, c sw se 5-17-7e.

LOUISIANA

CADDO PARISH—Pyramid Oil & Gas Co., Shreveport, Breard 1, 10-18n-16w, 723 ft s and 660 ft e of nw cor of sec.

CALCASIEU PARISH—S. A. Emerson & Pelican Gas & Oil Co., Vinton, La. Pra. Maronne, 21-9s-11w, 150 ft n and 570 ft w of se cor se¼ of sw¼.

IBERIA PARISH—Jefferson Lake Oil Co., New Orleans, Lake Peigneur 20, 12s-5e, 300 ft w of well No. 11 and 300 ft n of well No. 3.

RICHLAND PARISH—Richland Operating Co., Baremore 1, 19-16n-7e, 730 ft s and 590 ft e of nw cor of sec.

SABINE PARISH—W. M. Coats, Shreveport, Bowman Hicks 1, 2-7n-12w, 330 ft s and 330 ft w of center of sec.

TEXAS

BOWIE COUNTY — Raley-Jones Oil Co., Wichita Falls, W. W. Whybark, 100, 1, J. H. Dyer sur, 200 ft w of center of e line. H. W. Elliott, Fort Worth, J. W. Smith, 80, 1, Chas. Lewis sur, 200 ft from n and 150 ft from w line.

BRAZORIA COUNTY—L. A. Layne, Houston, B. H. Wisdom, 840, 8, A. Durst sur, 250 ft s of No. 7.

BROWN COUNTY — Preston & Herring, Brownwood, Hunter, 20, 0, 1, S. Jones sur, 450 ft from n and 1000 ft from e line.

CARSON COUNTY—Chas. Back, McLean, Fee, 160, 1, S 45, B 25, H&GN sur, 330 ft from w and 660 ft from s line of sec.

CALLAHAN COUNTY — Prod. Purchasing Co., of Texas, Eastland, M. Alexander, 80, 4, S 23, E. T. Ry. sur, 150 ft w of center of e line; 5, 3000 ft s of No. 4.

CALDWELL COUNTY—R. R. Lewis et al, San Antonio, K. Magee, 83, 1. J. Pinchback sur, 600 ft from s and e lines.

CHAMBERS COUNTY —Humphrey Corp., Houston, A. A. Eberspacher, 4, 1, H. Griffith sur, 71 ft from n and 700 ft from e line.

COLEMAN COUNTY — G. A. Carmichael, Cross Plains, M. B. Beavers, 1, B 16, Burkett sur, 40 ft from n and 100 ft from w line.

EASTLAND COUNTY — G. H. Wilkins, Eastland, T. Harrell, 40, 1, S 6, B 6, E .T. Ry. sur, 300 ft from n and 150 ft from e line.

FORT BEND COUNTY—Cullen & West & Prod. Co., Houston, A. P. George, 220, 1, Jno. Rabb sur, 300 ft from n and 305 ft from w line.

GREGG COUNTY—Texas Co., Houston, S. J. Boles, 25, 2, Wm. Carlton sur, 330 ft from e and 250 ft from s line. S. D. Walker, 21, 3, 1, S. L. Davis sur, 330 ft s and 300 ft from e line. G. W. Clark, 60, 2, G. A. Thomason sur, 330 ft from w and 255 ft from s line. Iowa-Payne Oil Co., Marshall, Elder, 10, 1, P. W. Warraner sur, 150 ft from s and e lines. Mook-Texas Oil Co., Fort Worth, D. Rodden, 23, 2, D. Sanchez sur, 300 ft from w and 278 ft from s line. Atlantic Oil Prod. Co., Dallas, S. G. Andrews, A, 110, 3, W. F. Hyde sur, 1440 ft from w and 1257 ft from s line. Dillard Oil Co., Wichita Falls, W. A. Jones, 50, 1, G. W. Hooper sur, 150 ft from s and w lines. Geo. E. Bobb, Longview, B. M. Barton, 1, M. Van Winkle sur, center. Gulf Prod. Co., Houston, J. S. King, 26, 2, W. P. Chisum sur, se corner. Continental Oil Co., Wichita Falls, C. C. Crews, 160, 2, L. Perkins sur, 875 ft from w and 450 ft from n line; 1, 450 ft from n and 375 ft from w line. Yount-Lee Oil Co., Beaumont, I. Denson, 3, D. Sanchez sur, 7150 ft from s and 6500 ft from w line. C. L. Taylor, 1, Wm. Castleberry sur, 5475 ft from n and 3300 ft from e line. M. Jones, 3, Wm. Castleberry sur, 900 ft from n and 2576 ft from e line. Alma Pet. Corp., Oklahoma City, Okla., J. W. L. Younse, 86, 1, Wm. Goodman sur, 450 ft from n and 200 ft from w line. Leonard Pet. Co., Tyler, E. Register, 100, 1, G. F. Penn sur, 300 ft from n and 325 ft from e line. Fleming & Kimbell Corp., Fort Worth, J. Burns, 30, 1, G. W. Hooper sur, 370 ft from w and 550 ft from s line. L. H. Wentz, San Antonio, G. W. Richey, 21, 1, Wm. Carlton sur, 280 ft from n and 335 ft from e line. Simms Oil Co., Dallas, A. J. Tuttle, 95, 1, Wm. Castleberry sur, 330 ft from e and 370 ft from s line. Margay Oil Co., Tulsa, Okla., R. Corbin, 55, 1, H. Edwards sur, 276 ft from w and 330 ft from s line. Stanolind Oil & Gas Co., Longview, J. C. Persons, 148, 4, Wm. Castleberry sur, 330 ft from n and 1480 ft from e line; 5, 200 ft from n and 955 ft from w line. Sun Oil Co., Dallas, J. M. Haynes, 202, 2, G. A. Thompson sur, 450 ft from w and 300 ft from s line; 3, 1306 ft s of No. 1. E. L. Walker, 320, 1, Wm. Friar sur, 389 ft from w and 450 ft from s line. Mayne & Mayne, Tyler, C. Alexander, 2 1, M. Van Winkle sur, 150 ft from e and 158 ft from s line. Gregg Oil Co., Gladewater, T. & P., 43, 1, Jno. Ruddle sur, 150 ft from w and 49 ft from s line. Vance-Fagin, Kilgore, C. M. Dickson, 1½, 1, M. Van Winkle sur, 150 ft from n and 100 ft from e line. C. S. Thomas, Shreveport, La., G. Davis, 4, 1, W. R. Chisum sur, 185 ft from n and 232 ft from e line. Humble Oil & Refg. Co., Houston, Corrected location. J. A. Knowles, 100, 4, M. Van Winkle sur, 409 ft from s and 210 ft from e line. J. H. Shepperd, 214, 1, T. Allen sur, ne corner. W. R. Hughes, 185, 1, D. Sanchez sur, 353 ft from s and 453 ft from e line. Shell Pet. Corp., Dallas, W. W. Elder, 145, 8, J. S. Caruthers sur, 515 ft s of No. 5. J. B. Watson, 122, 11, J. S. Caruthers sur, 330 ft s of center of n line. E. W. Willoughby, 57, 2, M. Van Winkle sur, 150 ft from n and e lines. Hamill & Smith, Houston, W. N. Kellum, 40, 1, C. Rhode sur, 250 ft from w and 330 ft from s line.

HARRIS COUNTY—H. H. Givan, Houston, Lobit, 740, 1, D. Middleton sur, 202 ft from e and 600 ft from s line, Blk 19.

HARDIN COUNTY — E. W. Skinner Oil Co., Saratoga, Kirby, 2, 17, BBB&C sur, 1 ft n of No. 16 on same derrick floor.

HENDERSON COUNTY — Westyde Inv. Co., Fort Worth, W. H. Thornhill, 280, 1, J. Spivey sur, 1020 ft from n and 1320 ft from e line.

HOWARD COUNTY — Merrick & Lamb, Ardmore, Okla., O. Chalk, 160, 2, S 125, B 29, W&NW sur. center of se¼ of nw¼.

MATAGORDA COUNTY — Ruth Oil Co., Houston, Gray, 150, 1, Wm. Hadden sur, 150 ft from e and 350 ft from s line.

MILAM COUNTY — H. W. Elliott, Fort Worth, J. P. Marek, 160, 1, B. Wickson sur, 767 ft from n and 500 ft from w line.

PALO PINTO COUNTY — Burton-McKee Oil Corp., Strawn, T. & P., 7, 1, Stwarn Twste.

RUSK COUNTY — Schuseter & Bassett, Houston, Deason, 10, 1, Pru-Ximinez sur, 150 ft from n and w lines. Shell Pet. Corp., Dallas, W. P. Moore, 140, 2, H. Wiggins sur, 1940 ft from n and 266 ft from e line; 3, 330 ft from w and 440 ft from s line. J. H. Spivey, 88, 1, M. McCabe sur, 500 ft from w and 300 ft from s line; 2, 311 ft from n and 315 ft from w line. W. B. Hamilton, Wichita Falls, M. L. Thompson, 10, 1, Cordova sur, center. Humble Oil & Refg. Co., Houston, G. Alexander, 100, 1, T. H. Smith sur, 330 ft from n and 500 ft from w line. H. Sexton, 64, B1, M. McCabe sur, 875 ft from e and 330 ft from s line. E. McDavid, 88, 1, T. H. Smith sur, 400 ft from nw and 300 ft from s line. S. A. Glover, 58, 1, T. H. Smith sur, 330 ft from n and e lines. J. H. Silvey, 100, 3, Geo. Berry sur, 1000 ft from n and 1600 ft from w line. J. T. Sexton, 310, 1, M. McCabe sur, 1350 ft from n and 900 ft from w line. J. W. Turner, 54, 2, T. H. Smith sur, 400 ft from se and 330 ft from s line. O. Blackwell, 74, 3, F. Cordova sur, 954 ft from n and 330 ft from e line. J. E. Glover, 130, 5, A. Melton sur, 1900 ft from w and 938 ft from s line. W. B. Key, 25, 2, J. Womack, 200 ft from s and w lines. R. A. Barksdale, 76, 2, S. P. Hollingsworth sur 330 ft from s and e lines. J. H. Wooley, 200, 6, F. Cordova sur, 288 ft from w and 384 ft from s line. J. Wooley, 124, 1, M. McCabe sur, 330 ft from n and 1415 ft from e line. Imperator Oil Corp., Dallas, J. Johnson, 18, 1, H. B. Dance sur, 150 ft from s and e lines. Arkansas Fuel Oil Co., Shreveport, La., E. Bealle, 41, 2, F. Cordova sur, 430 ft from n and 330 ft from e line. J. E. Marr, Tyler, H. O. Lown, 3, 1, W. G. Tutt sur, 150 ft from n and e lines. C. Z. Corzelius, Tyler, N. Turner, 1, 1, S. P. Hollingsworth sur, 105 ft from s and e lines. British-American Oil Prod. Co., Tyler, A. Thompson, 25, 2, R. E. Winn sur, 150 ft from w and 143 ft from s line. E. L. Chapman, Fort Worth, O. J. Russell, 38, 1B, J. English sur, 200 ft from n and e lines. J. Minche, 20, 1B, H. B. Dance sur, 170 ft from w and 150 ft from s line. Ward Oil Corp., Ardmore, Okla., E. S. Thrash, 200, 3, F. Cordova sur, 225 ft n and 150 ft from w line.

SMITH COUNTY—A. U. McCutchin, Arp, T. O. Wright, 5, 1, J. Vargas sur, 150 ft from e and 315 ft from n line. Gulf States Dev. Co., Dallas, S. S. Cook, 8, 1, Jas. Jordan sur, 211 ft from e and 150 ft from s line. H. H. LeMaster, Tyler, T. O. Wright, 8, 1, J. Vargas sur, 150 ft from n and w lines.

SHACKLEFORD COUNTY — Welch & Dyess, Albany, P. E. Thorp, 80, 2, S 6, Blind Asy. sur, 1320 ft from e and 150 ft from s line ne¼. J. L. Douglas, Moran, L. Power, 60, 1, S 45, Blind Asy. sur, 456 ft from n and 150 ft from w line sw¼.

SHELBY COUNTY—K. H. Francis, Timpson, J. Mimms, 162, 1, M. Smith sur 221 vs from nw and 110 vs from ne line of survey.

TRINITY COUNTY — Mound Prairie Oil Co., Fort Worth, Wm. Cameron, 58, 1, E. I. Panteleon sur, 310 ft from w and 772 ft from s line.

UPSHUR COUNTY — J. R. Smith, Longview, J. B. Webb, 20, 1, G. W. Hooper sur, 497 ft from e and 170 ft from s line. Sun Oil Co., Dallas, J. Hargraves, 200, 1, M. Mann sur, 330 ft from e and 250 ft from s line. Roeser & Pendleton, Inc., Fort Worth, E. C. Evers, 27, 1, G. W. Hooper sur, 293 ft from n and 150 ft from w line. Mary Ellen Oil Co., J. W. Davis, 215, 1, Jas. Burleson sur, 375 ft from n and 425 ft from w line.

VAN ZANDT COUNTY — Pure Oil Co., Fort Worth, B. W. Camper, 55, 1, J. Walling sur, 800 ft from n and 200 ft from w line.

WICHITA COUNTY—Geo. Proctor, Wichi-

(Continued on Page 73)

Wildcat Reports From All Sections

KANSAS

MORTON COUNTY — Hydraulic Oil Co., State land 1, nw se, 22-34-43w, sd 3460 ft.

SUMNER COUNTY—Trees Oil Co. & Shell, Springate 1, ne se sw, 6-34-2e, dr 450 ft.

COWLEY COUNTY—Fisher et al, Hunt 1, c sw se se 11-34-3e, ru and sd.

CHAUTAUQUA COUNTY—Leighty et al, Lemert 1, ne se, 36-34-9e, sp and sd.

SUMNER COUNTY—Spencer et al, Porter 1, ne sw 12-33-4w, dr 2720 ft. Otstot et al, Warlow 2, c se nw se, 22-33-3w, T. chat 4070 ft; so 4080 ft, wtr 4116 ft, dr 4135 ft.

FORD COUNTY—Carter et al, Community-Everett 18, c ne, 22-29-21w, (6000 ft test) dr 5530 ft.

SEDGWICK COUNTY—Buck et al, McNamaman 1, c ne nw nw 2-20-1e, T. sand 3535 ft, dr 3570 ft hfw. Magnolia, McLaughlin 1, nw c, 31-28-1w, dr 2145 ft.

FORD COUNTY—Swain et al, Henthorn 1, c nw, 21-25-24w, 5-inch 4645 ft, sd 5105 ft.

STAFFORD COUNTY—Rosenthal, Stanolind & Amerada, Gray 1, c ne, 11-34-13w, sd 2900 ft.

HARVEY COUNTY—Liggett et al, Davis 1, c sw se ne, 7-24-1e, rig. J. P. Flanagan, Sheridan 1, c sw, 32-22-1e, dr 2050 ft.

MARION COUNTY—Maidwell, La Master 1, nw c, 31-22-4e, td 650 ft, sd.

COFFEY COUNTY—Hegbert et al, Kroft 1, se sw se, 30-22-14e, 10-inch 818 ft, sd 1565 ft.

BARTON COUNTY—McCool et al, Isern 1, c sw se ne, 12-20-11w, td 1600 ft, sd.

RUSH COUNTY—Dewey & Mitchell, Greenwalt 1, c sw, 17-19-16w, td 3763 ft, rng 5-inch.

BARTON COUNTY—Skelton Oil, Ott 1, c se se, 16-19-14w, 8-inch 2414 ft, sd 2515 ft.

RICE COUNTY — Deitrick & Langston, Purcell 1, nw c, 33-19-9w, dr 3320 ft.

BARTON COUNTY—Syndicate Oil, Boertz 1, c nw se ne, 13-18-12w, td 2450 ft, sd.

RICE COUNTY — Allison & Fitzwilliams, Blake 1, ne nw 9-18-10w, 8-inch 2755 ft, dr 2865 ft.

CHASE COUNTY—Borden et al, Atkinson 1, nw se, 18-18-7e, machine.

MORRIS COUNTY — Urschell et al, Bersuch 1, c nw se, nw, 10-17-7e, ru and sd.

ELLSWORTH COUNTY—Keyes Bros. et al, Gregory 1, sw c, 23-16-9w, dr 1500 ft.

MORRIS COUNTY—Hankenson et al, Cessnum 1, sw se 24-17-9e, 2475-78 ft, hfw ur 6-in.

FRANKLIN COUNTY—Fields et al, Usher 1, se c 35-16-17e, sd 400 ft.

ELLSWORTH COUNTY — Milton et al, Kaster 1, se ne 6-14-9w, 6-inch 3300 ft, td 3350 ft, co.

OSAGE COUNTY—Riggs-Smith, Wood 1, c se nw 31-14-15e, 10-inch 1050 ft, sd.

RUSSELL COUNTY — Austin Drlg. Co., Rockefeller 1, se c 6-13-12w, 3320-25 ft, hfw td 3374 ft, sd.

SALINE COUNTY—Twin Mounds Oil Co., Weis 1, c w½ ne nw, 30-13-4w, (owd), td 2710 ft, dr by 8-inch.

DICKINSON COUNTY—Severs et al, Livingood 1, ne sw 13-13-2e, dr 4026 ft, so.

RUSSELL COUNTY—Gilbreath et al, Bratton 1, c ne, 33-11-13w, pb 3189 ft, sd.

LINCOLN COUNTY—Buck et al, Schlutz 1, c se ne sw 19-11-6w, rog.

GRAHAM COUNTY — Schleimeyer et al, Clark 1, sw ne ne 11-9-25w, 4639-4646 ft, hfw, td 4648 ft, sd.

CLAY COUNTY—Nebraska Oil, Tivier 1, sw c 19-8-9e, sd 2700 ft.

SHERIDAN COUNTY — Flo et al, Shoemaker 1, se sw sw, 27-27-26w, 10-inch 1178 ft, sd 2445 ft.

WASHINGTON COUNTY — Sincox Penwell 1, nw se nw, 16-3-3e, sd 1720 ft.

RAWLINS COUNTY—Danciger et al, Unknown 1, sw c 3-2-35w, 6-inch 2995 ft, sd 3501 ft.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports; *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn — abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd — shut down; sdtr — sidetracking; sp — spudding; sr — straight reaming; td — standardizing; sw—salt water; td—total depth; ur—underreaming; wo — workover; wosr—waiting on standard rig.

SOUTH TEXAS

ATASCOSA COUNTY — George E. Keith Jr.'s Mrs. George Martin 1, 3 mi s Amphion, fsh 2100 ft.

BASTROP COUNTY — Schimmel & Batts (Texas Pet. Co.) Trigg 1, J. Doyle sur, spudded. Smith and Burns' Marburger 1, King & Millett sur, dr below 500 ft. Texas Dev. Co.'s C. H. Ray 1, Thomas Christian sur, dk.

BEE COUNTY—Alexander et al's McFall 1, 3 mi s Skidmore, sd 1510 ft. Cosden Oil Co. & Rowan and Tong's Freeland 2, w Cosden pool, John Pace sur, sd 4295 ft. J. S. Mauldin's Mauldin 1, Kerr sur, sw cor Pettus townsite, sd 3930 ft. Mineral Oil Co.'s Kimball 1, Stephin Winship sur, 7 mi sw Pettus, sd 3543 ft. T. B. Slick Estate's Ray 1, Kerr sur, 1 mi sw Pettus townsite, lcn. United Prod. Co.'s Ray 39, T. Handon sur, ne discovery pool, dr 2558 ft in shale and lime.

BEXAR COUNTY—J. E. Anderson's San Antonio Suburban Irrigated Farms 1, near Chicon Lake, lcn. Witherspoon Oil Co.'s Knapick 1, J. Rialls sur, Cooksey district, lcn; Anoil 1, J. Rialls sur, Cooksey district, lcn.

BLANCO COUNTY—Hardy Sitton's Standeford 1, Sur No. 155, 3 mi nw Blanco City, sd 970 ft; McMillen 1, Benjamin Williams sur No. 125, 2 mi w Blanco City, sd 686 ft. Forest Oil Co.'s Hohenberger 1, sur No. 94, sd 712 ft.

BROOKS COUNTY — Ike Howeth et al's Singer 1, sur No. 436, dr below 2250 ft.

CALDWELL COUNTY — Ralph Lewis et al's Keith McGee 1, Pinchback sur, ¾ mi sw Mills' McMahon 1, spd. Mills and Chapman's McMahon 1, Pinchback sur, 6 mi se Lockhart, sd 2490 ft. Joe Bruner's alone 1, A. Floyd sur, s end of field, set csg, prep to dr in.

COMAL COUNTY — Caldwell & Lanier's Byler 1, HE&WT sur No. S-894, set 8¼-inch csg 704 ft.

DE WITT COUNTY — Gibson & Strum's Clark 1, Dolores Aldereto sur, 3 mi s Yorktown, ru and sd.

DUVAL COUNTY—John F. Camp & Southern Crude Oil Pur. Co.'s Hubbard 1, sec 75, 2½ mi e S&O pool, dr 2100 ft. Humble O&R Co.'s Kohler 50, sur 164, Kohler pool, dr 6992 ft. S. J. Carpenter's J. Benavides 1, Duval County, sec 1, blk 38, Mesquite sur, sd 1725 ft. L. E. Lockhart's Sutherland 1, sec 511, 5 mi n Kehler field, spudded. O'Byrne et al's Weil Bros., BS&F sur No. 568, below 2800 ft. Coffee et al's Jose Garza 1, center sur, 49, dr 1440 ft, no further report.

GOLIAD COUNTY—Neuhaus Drlg. Co.'s Pettus 1, Maria de Jesus Ybarbo sur, cored 10 ft deeper to 4308 ft, showed sand and shale, plugging back to 4288 ft to cut off salt water, will complete again, sand 4282-87 ft.

GUADALUPE COUNTY—John F. Camp's Sue Denman 1, Wm. Arrington sur, sw Darst Creek, ru. Adams, Lysles, North & Walton's A. Zobrowoski 1, Clements sur, sd, flow abt 8 bbls daily from chalk at 2212 ft. Harry Bruner's Jim Sherrill 2, Geo. Allen League, sd abt 200 ft. San Antonio Oil and Royalty Co.'s Dibrell 1, sec 6, lcn. Schleter, Atherson & Armstrong's Ogletree 1, Robert Smith sur, su 1745 ft. McGarity et al's Wesch 1, Thompson sur, no report. Linne et al's Linne 1, Cortario sur, ru.

HAYS COUNTY—J. E. Jones et al's Byler 1, John Ingram sur, 925 ft, sd.

JIM HOGG COUNTY — D. C. Dewitt's Gomez 1, sec 12, sd 400 ft. Cole Pet. Co.'s Palacios 1, sur 231, sd 1360 ft.

KARNES COUNTY—V. F. Neuhaus' I. L. Russell 1, Carlos Martinez sur, dk.

KENDALL COUNTY—R. M. Perkins (W. H. Sartain) Lawhorn 1, replacement hole for same operators Lawhorn 1, Richardson sur, dr 642 ft. Berget et al's Willie Haag 1, W. Avery sur, sd 1212 ft, repair rig. Dixon Oil Co.'s Behr 1, Jessie Wilson sur, dr below 2700 ft. F. S. Dibble's E. Ellerbracht 1, sur No. 77, no report. Hardy Sitton's W. B. Garvin 1, Richardson sur, sd 1125 ft. Theo. Hicks' Speck and Weidner 1, Twin Sisters Mountain district, prep to spud.

KERR COUNTY—Herbert Oil Co.'s Witt 1, W. H. Hamilton sur, sd 200 ft. Evans and Gant's Seiker and Mears 1, sec 1605, sd 4031 ft; Jeff Love 1, sec 1597, sd 4040 ft. Evans and Sprinkle's Jeff Love 2, sec 1592, 15½-inch csg run to 420 ft, to re-dr. Chester Martin's Young 1, sec 28, prep to re-dr 1175 ft, complete motor repair.

KIMBLE COUNTY—C. K. Bryant et al's Lambert 1, Lotta sur, sd 850 ft.

LIVE OAK COUNTY — Catlett and O'Neill's Hatcher 1, James McGloin sur, sd 3853 ft for repairs, cored dry sand 3620-30 ft, dr ahead. Houston Oil Co.'s Cartwright 14, Sandman sur, Mt. Lucas district, dr 4525 ft, cored sand and shale 3724 ft in Oglicene, dr deeper.

McMULLEN COUNTY — Brodie, Shearer and Emerich's Shiner 1, 12 mi se Tilden, sd 2000 ft.

MAVERICK COUNTY—Texas Gas Utilities Co.'s Chittim 8, Chittim field, dr below 4000 ft.

MEDINA COUNTY — Frank A. Brown's Fohn 1, San Antonio Irrigated Lands, F. Torry sur, ru. Genard Bros.' Crawford 1, Keppler sur, dr 650 ft in midway. J. H. Hickey's Jungman 1, near Chicon Lake, sd 565 ft. Sun Flower Oil Co.'s Mofield 1, sur 532, sd 2040 ft. Yancey Dev. Co.'s Faesler 1, sur 801, making dst 1945 ft at last report.

NUECES COUNTY—Gulf Coast Oil Co.'s Harrell 1, GC&SF sur, dr shale 4830 ft. Houston Oil Co.'s Harrell 2, John E. Dunn sur, dr 4025 ft; Morgan 2, plugged back to 4088 ft, attempt to complete. Southern Crude Oil Pur. Co.'s Stratton 1, Anchow sur, dr 3810 ft.

REAL COUNTY—Haby & Sprinkle et al's Haby, AB&M sur, fsh 2400 ft.

REFUGIO COUNTY — Blanco Creek Oil Co.'s Damman 1, blk 16, Bonnie View ranch, sd 4200 ft. Humble O&R Co.'s O'Conner 1, John Keathing sur, ru.

SAN PATRICIO COUNTY—United Prod. Co.'s Mayfield 1, White Pt, abn 3283 ft. Welder Oil Corp.'s Welder 1, Welder gas field, test sw at 3700 ft, abn 3704 ft. Jacob, Buzzini & Pickett's Welder 2, Amarro sur, set surface csg 300 ft.

VICTORIA COUNTY—Houston Oil Co.'s Konrad 1, T&NO sur, Beck Salt Dome, dr 4785 ft. The Texas Co.'s McFadden 3, John M. Rine sur, test 800 lbs gas through tester on ⅜-inch choke at 3010-16 ft. United Prod. Co.'s McFadden 5-A, 2800 ft ne No. 4-A, ru.

WEBB COUNTY — Eugene Garner, Jr.'s Billings 1, sur No. 71, dk, to ru.- Cole Pet. Co.'s Benavides 2, sur 1601, dr 3010 ft. Geo. S. Marshall's Benavides 1, sur 683 ft, lcn.

WILLIAMSON COUNTY—Hays and Gee's Johnson 1, B. C. Low sur, set 10-inch csg 1042 ft. Citizens Oil Co.'s Forwood 1, 2 mi nw Thrall, cored oil sand 1003 ft, dr ahead; Henry Fritz 1, 2 mi sw Taylor, spudded.

WILSON COUNTY—August Blume's Nickelson 1, J. Diaz sur, sd 1025 ft.

EAST TEXAS

Completions

Company, Well and Location	Initial Production Bbls.	Depth
PANOLA COUNTY—		
Everett Prod. Co., McDaniel 4, Alamson Barr sur	*	3544
Mid-Kansas O&G Co., Sholar 1, Susan Snider sur	*	1502

HARRISON COUNTY—O. H. Parkening's T. J. Taylor 1, Walter H. Payne sur, sd for fuel in shale and shells 2530 ft. Ryan Cons. Pet. Corp.'s H. H. Key 1, E. Carroll sur, cemtd 6⅝ cas 5275 ft at base anhydrites td 5283 ft (Trinity test). J. M. Furrh 1, T. J. Copelain sur, dk. J. M. Gholson's Bivins 1, T. D. Peterson sur, sd 2759 ft. shale. Olford et al's Bolding 1, W. O. Stanfield sur, sd 2688 ft. Marshall O&G Co.'s J. R. Watson 1, Thos. Iden sur, rig. (5000 ft test formerly Thomas & Kinsey's). Lloyd Oil Corp.'s Timmons 1, Jno. Findley sur, 10-in 240 ft.

HOUSTON COUNTY — Apex Drlg. Co.'s Thompson Bros. Lbr. Co. 1, 4 mi w Lone Pine, Jno. Chears sur, sd 792 ft, small oil and gas show at 396 ft. Jones-Irish Dev. Co.'s Woolters 1, 5 mi n Lovelady, sp and sd. Mineral Research Corp.'s G. L. Murray 1, 22 mi sw Crockett, J. Durst sur, sd in sh at 1207 ft. Phillips et al's Kennedy Bros. 1, dk. Porter Oil Co.'s Austin 5, dk. Snow et al's D. M. Heron 1, Procella sur, sp and sd. Romsland et al's Pennington 1, 4 mi w Grapeland, R. Horza sur, sd at 500 ft. A. E. Winfree's B. F. Hodges 1, 14 mi e Crockett, R. R. Russell sur, sd at 2295 ft.

MARION COUNTY—Rodeau & Hindman's Lindsey 1, Alex. Albright sur, sd 400 ft. J. W. Hamilton's Wood 1, Alex. Albright sur, sd 2380 ft. Claunch et al's Laun 1, Henry Fulgram sur, sd 300 ft. Sheldon et al's Brown 1, E. B. Fowler sur, sd 3750 ft.

NACOGDOCHES COUNTY — Benedum-Trees Oil Co.'s Conkrite 1, sd in sh at 5482 ft. Churchill-Armstrong's Mack W. Hart 1, 7 mi w Nacog., moving in rig. Foreman & Eblis' Norris 1, 14 mi e Nacog, ru and sd. R. E. Burt et al's Reese 1, ½ mi s Nacog., sd in sh at 4010 ft. Taylor & Vaughn's Greer 1, 1 mi n Appleby, sp and sd at 80 ft. Paul Vitek's M. B. Hayter 1, 7 mi w Nacog., M de Santos Coy sur, temp abn at 3037 ft.

PANOLA COUNTY—Dillon & Bradham's Baldwin 1, Hampton West sur, sd 1555 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn. (Trinity test). Southwestern O&G Co.'s Vinson 1, C. T. Anderson sur, sd 3873 ft. Daisy O&G Co.'s Bucks Hrs. 1, Jno. Palmer sur, cored shale and lime 3258-64 ft. Everett Prod. Co.'s McDaniel 4, Alamson Barr sur, dry abn td 3544 ft. Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, sd 650 ft. Hoffer et al's Cameron 1, W. A. LaGrone sur, dk. Davidson et al's Latham 1, Wm. Rich sur, bldg. dk for deep test td 550 ft. Ark. La. P. L. Co.'s Werner 14, B. C. Jordan sur, 7-in cas 4682 ft. bailed down 3000 ft showed sw sd wo td 4772 ft. Nelson et al's Williams 1, Jas. Hanks sur, 12½ cas 400 ft dr 902 ft. Mid-Kansas O&G Co.'s Sholar 1, Susan Snider sur, dry abn td 1502 ft. (corrected depth, core drill test). Stamps et al's Chadwick 1, Wm. Scantleberry sur, rig.

SHELBY COUNTY—Sloane Prosp. Co.'s F. B. Sandford 1, M. M. Vann sur, base PG 2838 ft top AC 3294 ft base AC 3384 ft sd for water 3604 ft. Chaparral Oil Co.'s Holt 2, Matthew Moore sur, claim sand core, sd 3127 ft. E. L. Chapman's Pickering Lbr. Co., 1, C. F. Henry sur, blew out est 25 mil ft gas spray fresh water, killed and set 365 ft 7-in cas still making 3 to 4 mil ft gas, impregnating surroundings sands, trying kill completely td 3864 ft. Mauld.ing et al's Frost Lbr. Ind. 1, A. B. Fountain sur, dr sticky shale 2700 ft. H. H. Gracey's J. A. Morrison 1, Wm. English sur, sd dr water well, td 2600 ft. I. M. Bradley et al's J. J. Asberry 1, G. W. Mitchell sur, sd in sandy lime 3280 ft. T. A. Martin's J. A. Bush 1, Alfred Lindsey sur, dk and mov in rig. Joiner et al's Foster & Billingsley 1, J. Bowling sur, ta in shale 1540 ft. Schultz et al's Hughes 1, J. Clay sur, dr lime 3915 ft. C. H. Tautenhahn's J. C. Bogard 1, Thos. Baker sur, sp partly rigged up, sd 20 ft. Glidden & Stephenson's Pickering Lbr. Co. 1, Jonas Harrison sur, fsh ds 3020 ft. Ridgeway et al's Polley 1, Domingo Gonzales sur, dk. Geo. L. Pace's Powers 1, Jno. Timms sur, dk. T. W. Tennent's Henry 1, Jno. Spradley sur, top PG 2100 ft. dr chalk 2240 ft. K. H. Francis' Inc. Mims 1, Mary Smith sur, 13⅜ cas 40 ft 10-in 393 ft dr shale 1220 ft. Smith et al's Carroll 1, J. A. Parker sur, 10-in 180 ft dr shale 1600 ft.

LOUISIANA GULF COAST

Completions

Company, Well and Location	Initial Production Bbls.	Depth
CALCASIEU PARISH—		
Vacuum Oil Co., State 7, Lockport	*	6770
ST. LANDRY PARISH—		
The Texas Co., Botney Bay 10, Port Barre	*	4190
ST. MARTIN PARISH—		
Federal Pet. Co., Daugareaux 1	*	5010
TERREBONNE PARISH—		
The Texas Co., L. L. E. Four Isle Bayou 5	*	1505

ACADIA PARISH — Yount Lee Oil Co.'s H. Latrielle 10, dr hd sn and sh at 5380 ft.

CALCASIEU PARISH — Wilfred Laboy's Jardell 1, 2 mi ne Vinton, dr in sn and r to bottom, td 3305 ft. Vacuum Oil Co.'s Waite 1, Iowa, td 6980 ft. trying to lub stuck dr st; State 7, Lockport, abn 6770 ft. Union Sulphur Co.'s Fee 767, stg cmt at 3735 ft, top OS.

CAMERON PARISH—Jim Oil Co.'s Erwine 1, East Hackberry, dr 2355 ft, set 190 ft of 10 inch cas. Vacuum Oil Co.'s Cameron Meadows 2, td 4310 ft, sdtr dr st at 2670 ft. Magnolia Pet. Co.'s Sweet Lake Land Co. 2, Sweet Lake, dr in sh at 7515 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 11, Jefferson Island, stg in anhydrite at 868 ft; No. 17, in sulphur at 770 ft, top cap 610 ft.

IBERVILLE PARISH—Standard Oil Co. of La.'s Myrtle Grove 1, Bayou Choctaw, temp sd, set 65 ft 10-inch cas in sdy clay; Schwing 3, temp abn in gbo at 2990 ft, OS and sw at 2960 ft; Schwing 6, td 3525 ft, r to bot, prep to dr deeper.

PLAQUEMINE PARISH — Humble O&R Co.'s Lake Washington 2, Lake Grande Ecaille, td 630 ft, set 13⅜ in. cas 630 ft.

ST. LANDRY PARISH—The Texas Co.'s Botney Bay 10, td 4190 ft, top OS 4160 ft, abn.

ST. MARTIN PARISH—Federal Pet. Co.'s Daugaureaux 1, Beaux Bridge, abn 5010 ft.

TERREBONNE PARISH—The Texas Co.'s Bay State Junop 2, Junop, lcn; L. L. E. Bay St. Elaine, Bay St. Elaine, 5680 heaving sh, washed to bot.; L. L. E. Four Isle Bayou, Four Isle Bayou, abn in salt at 1505 ft; State Lake Barre 6, Lake Barre, sdtr at 2500 ft, td 4000 ft; Lake Barre 13, temp abn in sh at 4520 ft.

VERMILION PARISH—Pure Oil Co.'s Alliance Tr. Co. 1, Gueydan, dr 6095 ft, hd sdy li calcite, slight show of oil under ether.

NORTHERN LOUISIANA

Completion

SABINE PARISH, (ZWOLLE)—		
Loring Oil Co., Bowman-Hicks 16, 3-7-12	*	2727

BIENVILLE PARISH — Arcadia Drilling Co.'s Atkins 1, 28-18-6w, dr lignite 1215 ft.

BOSSIER PARISH — Andrews & Davlin's Nattin 1, 15-22-14, 4½ cas 2882 ft, flowing est 2 to 5 bbls. oil daily by heads sd wo td 2890 ft. Rambaugh et al's Allison 1, 10-19-13, sd 1100 ft. Flint River O&G Co.'s DeMoss 1, 22-22-13, 6⅝ cas 3028 ft bailed dry sd wo in sandy shale 3089 ft. Dr. Hankins et al's Newell 1, 12-19-11, 1410 ft. D. L. Perkins et al's Ardis 1, 13-15-11, 10-in 120 ft sd wo 1000 ft.

CADDO PARISH—Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, ta in red shale and lime 3648 ft. United Gas Pub. Serv. Co.'s Smith 1, 33-23-16, 7-in 5395 ft td 5404 ft, dr plug. W. P. Wallace, Tr.'s, Cunningham-O'Connor 2, nw nw 15-17-14, 10-inch 84 ft, dr 720 ft. Pyramid O&G Co.'s Breard 2, se nw 10-18-16, dk pat.

CALDWELL PARISH—Monroe Pet. Corp's Burton 1, 36-12-2e, sd acct titles 2986 ft. Carter Bell et al's Taylor 1, 17-14-4e, dk.

DESOTO PARISH—Rellit O&G Co.'s Cannon Hrs. 1, 12-11-16, sd 1410 ft. W. H. Weichert's Smith 1, 31-14-15, sd 2350 ft. E. T. Oakes' Johnson 1, 3-13-15, sd in chalk 2011 ft. Walters & Nicholson's Jim Guy 1, 3-11-13, sd 700 ft. S. S. Mekk, Tr.'s Wagner 1, se se 5-12-14, 10-in 101 ft top hard chalk 1659 ft dr chalk 1836 ft.

NATCHITOCHES PARISH—C. M. Talley et al's Talley 1, 29-11-10, sd 1390 ft. W. M. Coates et al's Collins 1, sw nw ne 28-9-10, base

PERMITS

(Continued from Page 71)

ta Falls, J. B. Honaker, 40, 8, B 1, C&M sur, 270 ft from s and 150 ft from w line; 7, 270 ft from s and 450 ft from w line; 9, 300 ft e of No. 4.

WILLIAMSON COUNTY — Citizen's Oil Dev. Co., Taylor, A. Foorwood, 120, 1, 1320 ft from n and 1020 ft from e line; 2, 1200 ft from n and 1420 ft from e line.

ZAPATA COUNTY—A. R. McLennan, Laredo, Cuellar, 208, 3, S 318, No. 277 sur, 300 ft e of No. 1. C. J. Webster Oil & Gas Co., San Antonio, P. B. Trevino, 80, 1, & 12, B 2, 750 ft from n and 150 ft from w line. O. W. Killam, Laredo, A. M. Bruni, 2561, 1, Borrego sur, 2610 ft from ne and 3850 ft from se line. E. Cuellar, 418, 40B, No. 277 sur, 325 ft e of No. 41. H. L. Sargent, San Antonio, A. Gutierrez, 40, 1, Por. 10, B 5, Borrego sur, 922 ft from w and 472 ft from s line.

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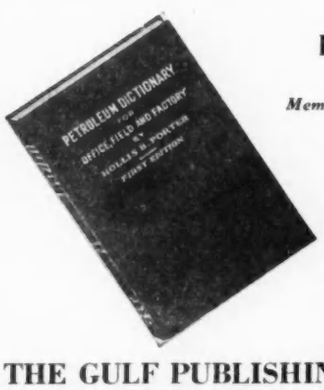

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RED RIVER PARISH—Mack Jourdan Co.'s Lockett 1, 33-13-10, sd 2500 ft.

RICHLAND PARISH—National Gas Co.'s Singletary 1, 20-18-7e, rig up to deepen td 897 ft (first drilled by Richland O&G Co.) Richland Operating Co.'s Baremore 1, 19-16-7e, lcn.

SABINE PARISH—Langbridge Oil Corp.'s Stephens 1, se ne 17-9-11, sd repr rig 2215 ft. Houston-Sabine Prod. Co.'s Sabine 1, 36-8-12, sd 2440 ft. J. J. Kean's Belton 1, 31-9-13, 8-in cas 1590 ft sd 1610 ft. H. W. Perritt's Bowman-Hicks 4, 2-7-12, sd 2502 ft. Bowman-Hicks 5, 2-7-12, lcn. A. H. Thames' Edwards Est. 1, 8-8-13, sd 1200 ft. R. L. Gay, Tr's Long-Bell A-1, nw nw 10-8-13, sr to make ds test at 3628 ft. Ohio Oil Co.'s Bowman-Hicks 9, 35-8-12, lcn. Bowman-Hicks 10, 35-8-12, lcn. Bowman-Hicks 11, 2-7-12, lcn. Diffie & Barrett's Lites 1, 34-8-11, 10-in 105 ft sd. Hudson & Bird's Walden 1, sw ne 26-8-11, 10-in 100 ft dr 200 ft. Hawkins et al's Moran 1, se ne 1-7-11, 400 ft oil in hole wosr td 2620 ft. Lyons & Neely's Duggan 1, 14-7-11, lcn. Texas Co.'s Nabors 1, ne se 2-7-11, 10-in 90 ft top marl 2368 ft arr set 6⅝ cas. W. M. Coates' Bowman-Hicks 1, ne sw 2-7-12, dk. Bengail Oil Co.'s Nulton 1, nw ne 1-7-13, dk pat. Magnolia Pet. Co.'s Peterson 1, ne ne 10-7-11, 12-in 130 ft cemtd 8⅛ cas 2370 ft td 2397 ft. L. K. McGuffin's Byrd 2, 1-7-11, sd 400 ft. Zeke Lohman's McCormick 1, ne sw 2-7-11, sd for fuel 1500 ft. Ben Merritt's Byrd 2, 1-7-11, 10-in 88 ft sd. Roy Baker's Sabine 1, 11-7-12, sd 2440 ft. Loring Oil Co.'s Bowman-Hicks 16, 3-7-12, 6⅝ cas 2330 ft dry abn td in chalk 2727 ft. Bowman-Hicks 17, 16-7-12, 15½ cas 110 ft top marl 2530 ft top chalk 2540 ft sent oil thru top 122 ft dk in ds test arr set 9⅝ cas td 2566 ft (was started for 6000 ft test) Gautier et al's Meshell 1, 30-8-12, tested dry show oil sd 2400 ft.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12, sd 3545 ft.

UNION PARISH—Don Brooks, Tr's Douglas 1, ne sw 9-22-2w dk. Ruston Drilling Co.'s Summitt Land Co. 1, 1-21-1w, top Nacatoch 2033 ft tested sw thru ds 2158-74 ft sd wo cas, in gray sand td 2534 ft.

WEBSTER PARISH—D. M. Coyle's Frazier 1, 27-23-11, dk. Cassidey & Davis' Nickerson 1, 29-23-10, sd 160 ft.

WINN PARISH—Gulf Ref. Co.'s Bodcaw Lbr. Co., A-1, 4-10-5w, dr lime and shale 3780 ft.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 1, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al, Sornick 1, nw c, se, hfw 2070-2170 ft, sd 3693 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden et al, Collmer 2, ne c se ne sw, sd 5640 ft, tools lost.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, show gas 5298-5303 ft, sd 5502 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, se c nw, sd 5850 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma Pet. Co., Phillips 1, c nw sw, td 5120 ft to aban.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey et al, Quier 1, se c sw, sd 3970 ft.

KAY COUNTY—T 28n, R 3e, Sec. 24, Summitt Drlg. Co., Hays 1, nw ne nw, td 3675 ft, pb 3222 ft.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al, McFadden 1, ne c sw, rig. T 22n, R 5e, Sec. 2, Sherry et al, Milsap 1, se c sw, hfw 3505-50 ft, sd 3552 ft. T 20n, R 5e, Sec. 6, W. A. Rookstool et al, Berry 1, nw ne sw, sd 1951 ft, show gas.

OKFUSKEE COUNTY—T 12n, R 10e, Sec. 3, Shepperd et al, Shepperd 1, se nw sw, sd 3690 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, show gas 5654-65 ft, sd 5733 ft.

LATIMER COUNTY—T 6n, R 19e, Sec. 16, P. English et al, Weaver 1, c nw se, sd 1542 ft.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff, Trustee, St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Bruner 1, se c nw, rig.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Ute Oil Co. et al, Williams 1, c sw, sd 5150 ft. T 11n, R 26w, Sec. 4, J. J. Rook & Palmer, Davis 1, c nw ne (owd), sd 3030 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey et al, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Snodgrass et al, Blocker 1, nw c, dr 2020 ft. T 8n, R 18w, Sec. 21, Burns & Prince, Dock 1, sw c, sd 1050 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good & Dowell, Cliffel 1, nw c, sand 1462-1501 ft, sd 1745 ft. T 7n, R 21w, Sec. 23, H. A. French, Murphy 1, sw nw se, sd 1654 ft.

COAL COUNTY — T 2n, R 8e, Sec. 10, Whitney et al, Miller 1, se c ne, (owd), sd 760 ft. T 1n, R 8e, Sec. 35, W. E. McCraw O&G, Stiring 1, ne c se, dr 1750 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Guinn 1, ne c, show gas 360-72 ft, sd 500 ft.

BRYAN COUNTY—T 7s, R 10e, Sec. 8, Bryan Oil Co., El Childs, ne se sw, sd 660 ft.

MISSISSIPPI

ADAMS COUNTY—Ark. La. P. L. Co.'s Brandon Halls Farms, Inc., 1, 32-8n-1w, rig.

CLARKE COUNTY (Quitman Dist.)—Gulf Ref. Co.'s Long Bell Lbr. Co. A-1, sw sw 10-2n-16e, lcn.

CLAY COUNTY—Ohio Oil Co.'s Cantrell 1, ne ne 16-15-5e, elev 270 ft, running 6⅝ cas after gas show in 1½ ft sand, td 4477 ft.

CHICKASAW COUNTY — Hightower & Golson's Fleming 1, 20-13s-3e, sd wo 6-inch cas 1505 ft.

HUMPHREYS COUNTY—Danciger O&G Co.'s Bellgrade Lbr. Co. 1, nw nw 29-14n-4w, sd wo surf cas 50 ft.

JASPER COUNTY (Bay Springs Dist.)—Bay Springs Pet. Inc.'s., J. H. Keyes 1, nw ne 21-2n-10e, sd for fuel 2130 ft in rock.

JEFFERSON COUNTY — M. M. Stokes' School Board 1, 14-10n-2w, 12-inch 125 ft, sd for fuel 960 ft, gummy shale.

MONROE COUNTY (Amory Dist.)—Amory Dev. Co.'s Bourland 1, 2-15-19, ta in brown sand 3007 ft. P. J. McAlpine's Cowart 1, 2-12s-19w, dr hd lime 3367 ft. Associated Royalties' School Board 1, sw se 16-15-17, ta 60 ft.

NEWTON COUNTY (Newton Dist.)—Dalton Dev. Co.'s Majure 1, se se 25-6n-11e, sp and sd.

NOXUBEE COUNTY (Macon Dist.) — Thompson O&G Synd.'s Donahue 1, se ne 25-16n-17, elev 280 ft, 12½ cas 20 ft, top Eutaw 477 ft, dr blue shale 1400 ft.

RANKIN COUNTY (Jackson Dist.)—Gulf Ref. Co.'s Hanna A-1, nw se 23-6-1e, 15½ cas 82 ft, 12½ cas 840 ft, dr 2135 ft.

SCOTT COUNTY—Gulley et al's Owen 1, 2-8n-9e, dk.

WARREN COUNTY (Vicksburg Dist.)—Eagle Lake O&G Co.'s Kiger 1, sw ne 9-18n-2e, sd 2607 ft.

WEBSTER COUNTY — P. J. McAlpine's Henley 1, 15-21-11e, old well mudding up hole to res dr at 1795 ft.

WINSTON COUNTY (Louisville Dist.)—Miss. Drilling Co.'s Scarbrough 1, nw nw 15-13n-14e, sd for fuel 3565 ft.

YALABOUSHA COUNTY (Water Valley Dist.)—J. D. Collett et al's Blackmer 2, ne sw nw 14-11-4w, ta in quartzitic material 3478 ft.

ALABAMA

MADISON COUNTY—Tennessee Valley O. & G. Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, driving 8-inch pipe below 1000 ft; Hobson Bros. 1, 9-8-2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, ta 700 ft.

TENNESSEE

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, dr sandy lime 2296 ft.

WYOMING

CARBON—Midwest Refining Co., U. P. 27, 27-11-81, stand cem. Prairie O&G, Bunker Hill 1, 29-27-87, rigged. P. & R. Overland Dome 1, 19-20-83, dr 1283 ft.

CONVERSE—Phillips Pete Corp., 27-32-69, start 11th core test. John Ackard, 24-33-72, gas show 1490 ft. Gust Anderson, se 7-35-75, lcn. Otto Olston, 1-32-74, spd.

FREMONT—P. & R. 1, 33-34-92, cem back from 6081 ft. Wiebolt et al, 35-33-99, sd 1850 ft. Ward O&G Co., 28-34-90, cem 2030 ft. Kinney-Coastal sw ne 22-3n-1w, rig up.

HOT SPRINGS—Grebo Roy., Inc., 3-47-100, sd 836 ft.

LARAMIE—Prairie O&G Co., Warren 1, 22-13-62, dr 586 ft.

LINCOLN—Wyo. Prod. Co., 14-24-11, dr 1700 ft.

NATRONA — Midwest's 11, nw 32-34n-77, stand 5340 ft. Cuyler Oil Co., 23-36n-85w,

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stand 2290 ft. Midwest's Midway 1, ne 23-35n-79w, hole bridged after good show, Muddy, 5908 ft.

NIOBRARA — Globe Pete Corp., 2-39-61, spd 20-inch hole.

PARK—Resolute Oil Co., 17-57-101, stand for orders 8725 ft, good showings.

SHERIDAN—R. & D. Oil Co., se 21-57-87, stand cem 600 ft.

SUBLETTE—Cretaceous Oil Co., sw 7-28-113, show at 350 ft.

SWEETWATER—Mtn. Fuel Supply, Tucker 1, 18-13-99, cem 3613 ft, td 3660 ft.

UINTA—Transwestern Petroleum, Ltd., 6-14-118, fsh tools 3100 ft. Clawson et al, nw 29-14n-118w, lcn.

WASHAKIE—Ohio Oil Co., lot 14, 19-45-92, dr 6930 ft.

WESTON—LeFaivre Oil Synd., se 29-45n-68w, resum at 1200 ft. Gose Synd., 28-47-65, resum 4918 ft. Osage Wyo. Oil Co., Witzell 1, se nw 30-46-64, co 1600 ft.

NEW MEXICO

CHAVES—Neal et al, Russell 1, nw 21-14-25e, stand 2320 ft.

DE BACA—Salado Dome Oil Corp., sw 6-4n-20e, ready to dr out cem 3200 ft. Landowners Oil Co., State 1, ne 16-1s-27e, ready to dr ahead, td 4508 ft.

GUADALUPE—N. M. Prod. & Ref. Co., McMullen 1, 24-5n-16e, dr 1650 ft.

HARDING—Kummbaca O&G Co., Kerlin 1, se 34-21s-30e, 3M gas at 970 ft.

LUNA—Angelus Oil Mining Ass'n, 20-21s-10w, dr 6132 ft.

McKINLEY—J. W. Halsell's 1, 17-18-9w, sd 3255 ft. Wms. et al's A. T. S. F. 1, se 19-18n-8, stand 1900 ft. United Kern Pete, Inc., sw 1-18n-11w, lcn. Dysart et al, Dysart 2, ne 14-14-10w, sd temp at 1315 ft. Johnswood Oil Co., Hannett 1, sw 12-15n-10w, dr 600 ft.

MORA—Fulton Pete Co.'s Santa Fe Dioxid Co., Wagonmound 1, ne 14-19-21, stand 1316 ft.

OTERO—Ernest et al's 1, se 20-25s-7e, sd 1005 ft. Pasotero Oil Corp., Evans 1, sw 22-24s-12e, dr at 1265 ft.

RIO ARRIBA—Berrenger et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pete Co.'s Gov't 1, se 14-30n-7w, sd 250 ft. Governador Oil Co.'s 1, se 12-29n-7w, dr 1346 ft.

ROOSEVELT—Peterson et al, Good 1, ne 32-5s-30e, ready to spud.

SAN JUAN—Kutz Canon O&G Co.'s Day 1, se 20-28n-10w, dr 3412 ft. Rio Grande Dev. Co.'s 2, 9-29-11, stand 1530 ft. Continental Oil Co.'s Rattlesnake 4, 1-29-19w, sdtr 4675 ft, td 4730 ft, ready to dr ahead. San Juan Leaseholds, Bowman 3, ne 30-30-15, sd 2635 ft. Reserve Oil Co., Reserve 3, se 36-22-14, ur, td 810 ft. R. C. Oswell et al, nw 34-30n-11w, dr 525 ft. Williams et al, Stallings 1, sw 17-25n-15w, stand 150 ft. Ortega et al, Westwater 2, ne 24-31n-16w, co.

SANTA FE—Jones, Owsley et al, 5-10n-9e, dr 170 ft.

TORRANCE—Williams et al's Staplin 1, ne 16-8n-10e, ready to res 1643 ft.

VALENCIA—Harlan et al, Harlan 4, nw 5-6n-2e, stand 3800 ft. Acme Dev. Co., Santa Fe 1, nw 27-7n-4w, stand 5000 ft.

COLORADO

ADAMS—N. M. Slatt's 1, se 27-26-64w, carry 6⅝-inch 3718 ft.

ARAPAHOE—McDeb Drlg. Co.'s Fitzsimons 1, ne 7-4n-68w, run 4¾-inch, td 5835 ft.

BOULDER—C. T. Ahlstrand's Woodley 1, nw 8-3n-70, dr at 85 ft.

EL PASO—Utemore Synd., Cannon 1, ne 10-16s-66w, sd 1125 ft.

GRAND—Oil Mineral Land, Inc., McElroy 1, sw 14-2n-81w, stand 545 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, prep to resume, td 3920 ft.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, mvg in. Klem Pete Corp.'s Olbert 1, se 9-26n-12w, stand 3125 ft. Murchison Oil Co., Doescher 1, nw 29-33n-12, changing to cable tools 1505 ft.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, dr 3410 ft.

MONTROSE—Uncompahgre O&G Co., Title & Trust 2, 27-50n-10w, td 1021 ft.

MORGAN—Ind Terr. Illum. Oil Co., State 1, ne 16-1n-57w, dr 4285 ft, hole trouble. Independent O&R Co., Schmidt 1, nw 19-6n-60w, prep to bld rig. Juhan et al, Kent 1, sw 2-2n-57w, dr 836 ft. Colo. Ass. Oil Co., 1, se 14-4n-58w, ready for derrick.

PUEBLO—Anchor Oil Co.'s Easley 1, sw 35-22s-57w, td 705 ft.

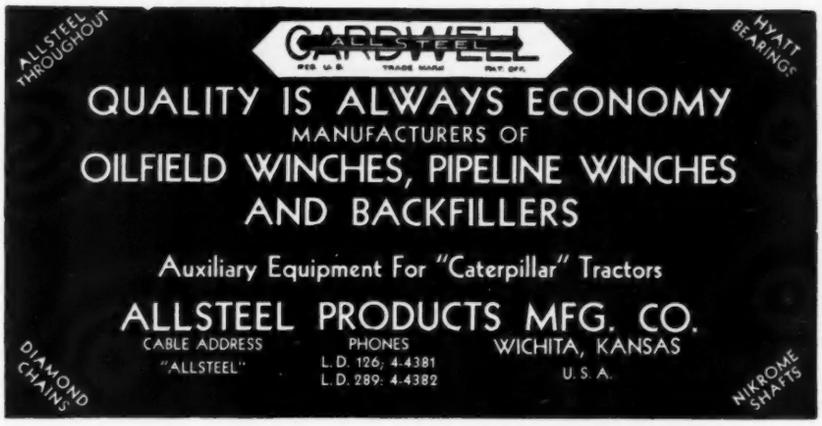
PARK—So. Park Oil Co.'s Milligan 1, se 13-8s-76w, dr 2125 ft. So. Park O&G Co.'s Easche 1, ne 5-9s-76w, prep to run 8¼-inch at 2370 ft.

RIO BLANCO—California Co.'s Raven 1, se 20-2n-102w, dr 1315 ft. Magnolia Pete Co.'s Maddock 1, se 9-2s-96w, dr 685 ft.

ROUTT—Fish Crk O&G Co., Ornholt 1, ne 29-4n-87w, resum at 115 ft.

WASHINGTON—Middlemist Oil Co.'s Middlemist 1, se 14-4-56, stand 1510 ft.

WELD — Reiter-Foster and Platte Valley



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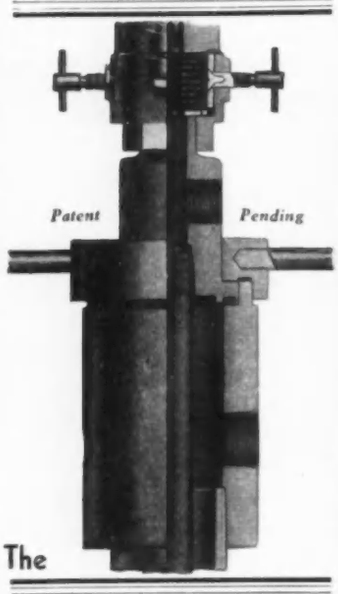

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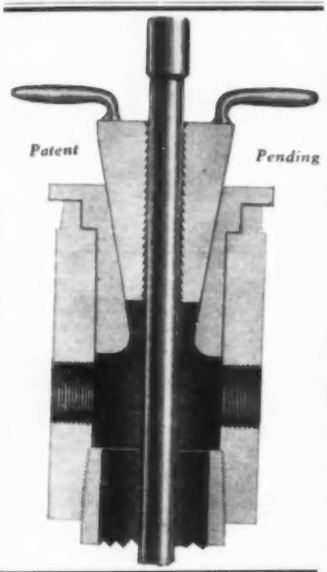

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Pete Corp., Johnson 1, nw 24-6n-61w, dr cem 6226 ft. Aztec Corp., Kirchoff 1, se 1-6n-61w, mvg in. Retter Oil Co., Smith 1, 14-1n-68w, resum 1171 ft. Conoco, Gadbois 1, sw 24-6n-61w, rigging up. Conoco, Briggs 1, sw 13-6n-61w, prep to spud. Vincent & Cunningham, Gadbois 1, nw¼ 25-6n-61w, mvg in.

MONTANA

CASCADE—Andover Oil Co.'s Floweree 1, se 29-21-2w, td 2175 ft, hfw sulfur water.

GALLATIN—Gallatin Valley Oil Co. nw 1-1n-4e, dr.

GLACIER—Fulton Pete Corp.'s Blackfeet 1, ne 28-38n-12w, cem cave, td 2500 ft.

GOLDEN VALLEY — Golden Valley Oil Co., 28-6n-22, dr 2050 ft.

LIBERTY—Northland O&G Co.'s Yurman 1, 32-33n-5e, sd 3700 ft. Peoples O&G Co., First Nat'l Bank 1, nw 17-36-6e, sd 1285 ft. California Co. for Utopia Oil Co., se 11-33-6e, ur pipe to 3220 ft.

ROSEBUD—Prairie O&G Co., 1-XX, 26-10-39e, bld rotary rig.

SWEETGRASS—Shoshone Cons., nw 23-2n-15e, run 6-inch, td 5793 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft. California Co.'s Sullivan 1, nw 34-27-7w, dr 820 ft. Earl Oil Corp., Gad 1, se 22-22.8w, dr 3600 ft. Trans-American Oil Co., State 1, sw 21-24-8w, dr 425 ft.

TOOLE—Liquid Gold Oil Co.'s Robert 1, ne 25-36-12, wait for 5-inch at 2500 ft. Oregon Oil Synd., se 20-36-2e, wait for equipment.

YELLOWSTONE — Pete Antonioli, 21-2n-25e, wait cas 1600 ft.

ARKANSAS

Company, Well and Location		Initial Production Bbls.	Depth
LA FAYETTE COUNTY—			
McIver et al, Hattle 1, 1-20-26.....		*	3310
OUACHITA COUNTY—			
Copenhaver et al, Elliott 1, 11-15-17		*	2210

CHICOT COUNTY—W. R. Smith's Lytle 1, 31-18-3, ta 2925 ft.

CLAY COUNTY—S. C. Jeffus, Tr.'s Underwood 1, 4-20-8e, sd 1252 ft.

CLEBURNE COUNTY—Donnell et al's Fee 1, 33-11-9, sd after testing sw, td 3515 ft.

CLEVELAND COUNTY—Crumm & Stilwell's Bell 1, 10-10s-12w, rig.

COLUMBIA COUNTY — Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, cemtd 8¼-in cas 800 ft.

DALLAS COUNTY—Jno. James, Tr.'s Fordyce Lbr. Co. 1, 11-9s-15w, sd 2520 ft. E. C. Brewer, Tr.'s Hillman 1, 20-10-13, sd in white sand 2869 ft.

DREW COUNTY—Co-operative Dev. Co.'s Hardy 1, ne ne 6-13s-7w, rig.

HOT SPRINGS COUNTY—Starr Oil Co.'s Cunningham 1, 11-5-16, junked and abn first hole, td 1304 ft, skidded 30 ft south, sp new hole cemtd 12½-in cas 62 ft, dr 948 ft.

JOHNSON COUNTY—Blackwell O&G Co.'s Wyver 1, 21-8-23, ta 5600 ft.

LA FAYETTE COUNTY—Crawford Drilling Co.'s Vaughan 1, 25-19, 25, dk. McIver et al's Hattle 1, 1-20-26, dry abn in shale td 3310 ft.

LAWRENCE COUNTY — Marguerite Dev. Co.'s Broadway 1, 31-17-1, sd 45 ft.

LINCOLN COUNTY — L. B. Cook, Tr.'s McGehee Pltg. Co. 1, 5-8s-7w, 10-in 1294 ft, dr gumbo 2198 ft.

LITTLE RIVER COUNTY — Fay Roberts Oil Co.'s Russell 1, 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MILLER COUNTY — W. E. Noel et al's Dickson 1, 11-20-27, lcn.

OUACHITA COUNTY—Copenhaver et al's Elliott 1, se se 11-15-17, dry abn td 2210 ft.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, ta 2920 ft. E. R. Henderson's Lee 1, 31-8s-24w, 8¼ cas 350 ft, cored hd red shale 462-65 ft, sd 1020 ft.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, sd 1536 ft. Waldron O&G Co.'s J. G. White 1, 17-3n-29w, sd wo cas 1860 ft. (sec hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, tested sw sd 3515 ft. Ozark Nat. Gas Co.'s Giard 1, 34-8n-30w, dr 798 ft.

SEVIER COUNTY—Tri-State O&G Co.'s Bank Of DeQueen 1, 34-8s-32w, rigged up and sd.

UNION COUNTY — Southern Prod. Co.'s Wingfield 1, 16-19-15, sd 2608 ft. Lion O. R. Co. et al's Guy P. Hayes A-9, 4-16-15, cored sw sand 4858-60 ft, td 4860 ft (5000 ft. test). Wilson & Chapman's Handley 1, 3-18-13, ta 3570 ft. Doty Norman A-1, 3-18-13, lcn. Doty Norman B-1, 3-18-13, lcn. Henry Norman 1, 3-18-13, dk. Marine Oil Co.'s W. B. Thompson D-1, 3-18-13, rig up and P. Winn Est. A-2, 11-18-13, ta 3586 ft.

WASHINGTON COUNTY—Lincoln Lease Holding Synd's Townsite 1, 3-15-32, ta 1500 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft. O'Hara & Shetterley's Boyd 1, 2-16-32, ta 650 ft. Delbert Graves' Cunningham 1, 14-15-32, sd in gray sand 602 ft.

VAN BUREN COUNTY — J. S. Martin's Scandland 1, 5-9-13, sd 50 ft.

YELL COUNTY—T. Luckett's Balcon 1, 36-7-12, sd 3710 ft.

SOUTHERN CALIFORNIA

ALHAMBRA — Yellowstone Oil Corp.'s Huntington 1, 24-1-13, re-dr 600 ft, pulled 13⅜-inch cas, td 3920 ft; Construccio 1, 19-1-12, dr shale and gray sand 1755, will not test upper showings at this time.

CALABASAS—L. W. Rucker's No. 1, 26-1-17, dr shale 400 ft.

FULLERTON—Brea Canyon Oil Co.'s Fee 47, sd 7345 ft. Standard's Bastanchury 1, 21-3-10, co 7180 ft, td 8145 ft.

HERMOSA BEACH—Cone & Smith's Kellogg-Burdick 2, 6-4-14, lcn; Kellogg-Burdick 3, 6-4-14, lcn. S. H. Human's No. 1, 6-4-14 lcn.

NEWHALL—W. T. Ball's No. 1, 34-3-16, lcn. Guarantee Oil Co.'s Hammond 1, dr shale 3225 ft. Rayne Oil Co.'s No. 1, 11-3-16, lcn.

OLINDA—Graham-Loftus Oil Co.'s No. 1, 18-3-9, dr hard sand 9182 ft.

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Co.'s No. 1, 24-2-15, co 6420 ft, will deepen.

PUENTE — El Dorado Oil Co.'s Baird 1, 30-2-9, dr hard sand 1668 ft.

SAN FERNANDO — El Caballero Estates Co.'s No. 1, 23-1-16, dr gray sand 925 ft.

WILMINGTON—York and Smullin's Watson 1, 29-4-13, co to continue test, td 4745 ft, will place cement shot.

YORBA LINDA—International Pet. Corp.'s Fricke 1, 21-3-19, lcn.

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
VENTURA COUNTY—		
Superior Oil Co.'s Kirtlan 14-1, 14-4-21	*	7652
KERN COUNTY—		
Shell's Porter 1, 29-30-29	*	6410
KINGS COUNTY—		
Valley Exploration Co.'s Brennan 1, 20-23-20	*	3750

KERN COUNTY

BELRIDGE—Belridge Oil Co.'s No. 1, 27-64, 27-27-20, dr oil sand 5125 ft; No. 35-48, 35-27-20, dr out cmt 5005 ft; No. 35-49, 35-27-20, dr shale 2850 ft. Continental's Result 2, 36-27-20, dr oil sand 5465 ft. General Pet.'s Berry 1, 30-28-21, sr 5275 ft. Standard's McPhail 2, 36-27-20, will plug to 5600 and shoot.

BUTTONWILLOW — Milham Exploration Co.'s Paige 1, 6-28-23, will deepen from 2378 ft. Wilshire Oil Co.'s Nordon-Salisbury 1, 7-29-24, sd 6990 ft.

DEVIL'S DEN—Cumberland Oil Co.'s Cumberland 2, 21-26-18, dr shale 600 ft. Standard's Alferitz 1, 14-25-18, pumping oil and water 3215 ft.

McKITTRICK — California Oil Producers' No. 1, 30-30-22, dr shale 1835 ft.

TEMBLOR HILLS — Kent & McDonald's No. 1, 3-22-32, dr shale 1840 ft.

WEED PATCH — Osborn & Colter's Shell-Duff 1, 15-30-29, plugged to 3465 ft; Duff 2, 15-30-29, dr sand 1778 ft. Shell's Porter-Day 1, 29-30-29, pumping 200 bbls oil, plugged to 5789 ft. Sy Wicker's No. 1, 12-30-28, dr shale 3232 ft.

SANTA BARBARA COUNTY

COAL OIL POINT—Bolsa Chica Oil Corp's Augur Permit 191-1, 24-4-29 deepening to Sespe, td 4350 ft. Goleta-General Pet's Moore 3, dr shale 6000 ft. Ohio's Oakley 1, 16-4-28, rigging up rotary. Strickland &Tippett's Dunl can 1A, 19-4-27, dr shale 4035 ft.

LOS ALAMOS—N. S. Wilson's Midwest 1, 2-7-33, dr shale 3285 ft.

LOS OLIVAS—Zaca Oil Co.'s No. 1, 20-7-31, rigging to sp.

ORELLA—General Pet.'s Erburu 10, co 3112 ft. Oakburn Oil Co.'s Sperry 169-1, hole caving, will run cas, td 2821 ft.

PURISIMA — O. C. Field Gasoline Co.'s Union Annex 3, pumping water and some oil, td 3238 ft.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr shale 6835 ft.

VENTURA COUNTY

RINCON — Chanslor-Canfield Midway Oil Co.'s Hobson A2, 23-3-24, plugged to 8050 ft, td 10,030 ft. Continental's Grubb 1, 23-3-24, dr shale 6025 ft.

SOUTH MOUNTAIN—H. H. Bell's Lemon 1, 22-3-21, lcn.

MISCELLANEOUS

FRESNO COUNTY—Associated's Jacalitos-Mitchell 1, 22-21-15, dr shale 6050 ft.

KINGS COUNTY—L. W. Seymour's No. 1, 10-23-16, co 1010 ft. T. H. Purman's Avenal 1, 36-23-17, dr shale 4200 ft. Kettleman Lakeview Oil & Gas Co.'s No. 1A, 20-23-20, co out cmt 1095 ft.

MENDOCINO COUNTY—Twin State Oil Co.'s Soldani 1, 14-12-17, dr shale 7050 ft.

MONTEREY COUNTY — F. A. Brown's Taylor 1, 15-23-14, repairing rig 797 ft. Pacific Island Oil Co.'s No. 1A, 19-23-15, fsh for core barrel 1350 ft.

SAN LUIS OBISPO COUNTY—A. T. Jergin's No. 1, 6-32-13, dr shale 1768 ft. Paso Robles Synd.'s Emerick 1, 34-27-11, rigging up rotary 4027 ft.

TULARE COUNTY — Big Four Drilling Co.'s No. 1, 29-23-27, co 4330 ft. Ducor Pet. Co.'s Zimmerman 1, 14-24-27, co 2180 ft. Ellis and Stanford's No. 1, 20-24-23, dr hard sand and shale 1055 ft.

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General Geology of Northeast Mexico

(*Continued from page 32*)

STRUCTURE

Sierra Madre Oriental Fault

The Sierra Madre Oriental is an enormous thrust fault with massive limestone of the Lower Cretaceous standing on edge and forming high and closely packed mountain ranges with very steep intervening canyons. North of Monterrey the strike of these ranges changes and they are not so high and not so closely packed. In the north the individual mountain ranges are simple folds on the ends passing into thrust faults in the center. The Cerro de la Silla at Monterrey is a limestone range parallel with, and in front of, the Sierra Madre fault proper. On its west flank it shows underthrust from the west. Paralleling the Sierra Madre fault and for several miles toward the east, partly metamorphosed shales dip steeply toward the mountains. This is characteristic of thrust faults of great magnitude. This enormous thrust fault undoubtedly has affected the folds on the east, but the extent and relationship has not been determined.

Front Ranges

Some distance east of the Sierra Madre and approximately paralleling it, is a series of hills and mountains consisting of comparatively simple anticlinal folds. On the south these begin with the Sierra Papagayos, including the Sierra Picachos, the Sierra Lampazos, the Sierra de Vallecillo, the Lomas de la Laja, the Peyotes Hills and the Sierra de Burros. The Sierra de Vallecillos is a low parallel fold east of the Sierra de Lampazos and is not so high as the latter. The dips on these folds are comparatively gentle, few being more than 10° on the east flank and averaging about twice that on the west. The steeper west dip is probably a result of the Sierra Madre movement. West of these ranges are broad basins in which the shales of the Upper Cretaceous are much disturbed. In a few places the Lower Cretaceous is exposed in complicated folds. These ranges seem to have acted as an effective barrier against the Sierra Madre movement. The difference in the intensity of the movement on either side of these Front Ranges is indicated by the following analysis[20] of coal from Eagle Pass east of the Peyotes and from the Sabinas basin west of the same hills:

Analysis of Eagle Pass Coal

	Per Cent
Moisture	2.50
Volatile hydrocarbon	40.60
Fixed Carbon	42.75
Ratio	1.05
Ash	14.18
Color of ash	Light Brown
Coke	Coherent hard

Analysis of Coal from Santa Rosa Region

	Per Cent
Moisture	5.75
Coke	77.147
Ash	3.53
Specific Gravity	1.41
By computation this coal should have:	
Fixed carbon	73.617
Volatile hydrocarbon (approximately)	17.103
Ratio	4.3

Tamaulipas Arch

In Central and Southern Tamaulipas there is a range of low mountains known as the Sierra de Tamaulipas on the south and the Sierra de San Carlos on the north. These are connected by a low arch, the Mesa Solis. These mountains form a low broad arch, with a porphyry core appearing in the San Carlos. The limestone is reported to have been depositel on this porphyry rather than the porphyry having been intruded into the limestone. This arch continues southward and the Cacalilao and Panuco fields are situated on it. It is not traceable toward the north, but there is no good reason to believe that it does not extend northward as it does southward. On the east flank of the continuation of this arch toward the south, is the famous Golden Lane. The producing horizon in the Golden Lane is a reef limestone with a fault on the west side. West of the Cacalilao-Panuco fields, at the foot of the Sierra Madre, is a long fault scarp expressed as a low range known as El Abra and composed of a reef limestone reported to be of the same age as that of the Golden Lane. The limestone in these two localities is entirely different from the ordinary Tamasopo and is reported to be somewhat younger in age.[8] East of the Mesa Solis, in the vicinity of Abasolo, there is a high hill known as the Cerro del Aire, which is composed of a reef limestone supposedly of Upper Eocene age.[8] The Golden Lane and El Abra range were undoubtedly fault scarps on which reef-forming limestones were deposited. Their relationship to the Tamaulipas arch indicates that they were faults facing this arch which has acted as a positive segment from at least early Cretaceous time to the present. The Cerro del Aire was a similar fault scarp during Upper Eocene time and may also have been one during the Cretaceous. The position and strikes of the Zacate and Tio Bernardo structures in northeastern Nuevo Leon in respect to the prolongation of the axis of the Tamaulipas arch suggests that these also are fault scarps on the flank of that arch. The structures on the east along the Tamaulipas-Nuevo Leon boundary are probably intimately connected with this same positive structural feature.

Escalera-Aldamas Terrace

Beginning with the Salada arch on the north, paralleling the outcrop of the Carrizo sandstone, there is a zone ranging in width from five to 10 miles, of exceptionally steep dips ranging from 5° to 20° and accounting for a drop of almost 5000 feet within a few miles. Northwest of Aldamas Station, the strike of the beds on the flank of this terrace swings sharply west to the vicinity of Herreras and from there turns southward and steep dips extend beyond San Antonio, south of San Juan river. On top of this terrace the beds are comparatively flat. On top and along the edge of the terrace are several well known domes and plunging anticlines. Among these are the Escalera anticline or Salada arch, the Barreta anticline, the Guerrero dome, the Ojo de Agua dome, and the north Aldamas anticline. In continuation of the axis of the terrace and in the reentrant formed by the swing of the axis of the terrace to the west, in the vicinity of Los Aldamas, is the plunging structure known as the South Aldamas anticline. South of this is another structure with the same

general strike, which we have called the China anticline. This is a low anticline immediately east of the town of China and probably does not have more than 100 feet of west closure. It is more in the nature of a small terrace rather than an anticline proper. The Vaqueria anticline, apparently a much larger structure, is south of this and on the same strike. On the flank of this terrace, and distinct from the South Aldamas, China and Vaqueria anticlines, is here and there a small fold whose relationship to the other folding in the area is obscure. The La Presa anticline on which the Ohio-Mex is now drilling, and the Banquete anticline east of General Bravo, are representatives of these. The Banquete anticline is a simple fold five miles in length, with a west reversal of about 150 feet. It is closed on all sides, with the exception of the northwest, and on this side there are not sufficient data to determine whether it is closed here also.

Cerralvo Zone

Between the Escalera-Aldamas terrace and the Front Ranges, there is a narrow zone characterized by sharp folds and many faults. On the north this begins with a faulted zone south of Las Tortillas, in the vicinity of the ranch La Lajilla, near the Cretaceous-Eocene contact and is practically continuous southward beyond the ranch San Antonio, south of the San Juan River. Between Los Herreras and Ramones, this feature converges with the Escalera-Aldamas terrace where the latter turns sharply west. This zone follows closely the Cretaceous-Eocene contact, being mostly in the area covered by the Midway. The well being drilled by the Cia de Petroleo Mercedes, subsidiary of Standard Oil Company of New Jersey, between Cerralvo and General Trevino, is on a fold within this zone.

Pescada and Roma Structures

Paralleling the Escalera-Aldamas terrace on the east, west and south of Roma, Texas, there are two known structures called respectively, the Roma and Pescada anticlines. The Pescada anticline is the better defined of the two. Several hundred feet of closure is indicated by good exposures showing west dips in San Juan River west of the axis. The Pescada structure plunges south before reaching the railroad. Two wells drilled on this structure, one to 3600 feet and the other slightly deeper than 3700 feet, have had good showings of oil and gas. The first well drilled by the Control de Administracion del Petroleo Nacional had excellent shows of both oil and gas, but the well was junked before testing. The second well, drilled nearby, by San Juan Drilling Company, slightly higher on the structure, reported several showings of gas. These wells were commenced a few hundred feet below the top of the Fayette.

Zacate and Tio Bernardo Structures

Beginning near the point of the V formed by the boundary line between the states of Nuevo Leon and Tamaulipas, almost due south of Camargo, is a faulted anticline, striking S. 20° W. 25 miles in length. This structure has a fault on the east side, down-thrown toward the east, whose displacement is at least 1000 feet. It has a closure on the west between 1000 and 2000 feet. The exact age of the beds exposed on the structure is not known. They are probably lower Fayette; if so they are overlapped on the north and west by younger Fayette. We are operating two core machines on this structure and within a few months expect to have more definite information as to the age and relationship of the beds in that area. On the east, parallel with the fault, is a narrow band of sandstones and shales which we have called Arenal and which are probably equivalent to upper Fayette in age. In some places these Arenal beds are missing and the Frio is faulted against the sandstones covering the structure. The upper Fayette beds were very slightly affected by the folding in this structure and may not have been deposited over it. However, there certainly was movement along the fault, at least after the deposition of the Frio. Whether or not the normal thickness of Fayette was deposited east of this fault, we have no means of knowing. As mentioned in the discussion of the Tamaulipas arch, this structure is probably more nearly related to that feature than any other structural feature of the region. Our theory is that it is a fault scarp facing the plunging end of the Tamaulipas arch. If such is the fact, the fault has probably existed since early Cretaceous time, and it is quite possible that reef limestones were formed on it during Cretaceous or even during early Eocene time.

Southeast of this structure is a sandstone hill within the Frio flat, in which sandstones foreign to the Frio, being probably Fayette, are exposed. These sandstones dip 7° toward the west, and strike N. 20° E. The hill is only about 800 meters in length and is surrounded by a broad plain, covered with soil derived from the Frio. From its strike we are led to believe that it is probably a fault with downthrow toward the east, similar to the fault on the east side of the Zacate structure but much more limited in extent. The dips in the sandstones along the Frio-Arenal contact on the west indicate that this represents an uplift of not less than 500 feet. It is possible that this structure may be a simple anticline rather than a faulted one, as we believe. This is the Tio Bernardo structure.

For several miles east of the Zacate fault, the Frio is very much distorted. With the exception of a few miles of Frio overlapped near the north end of the Zacate structure, the eastern boundary of the Frio corresponds with the general strike of the region. As mentioned under stratigraphy, in the south the outcrop of the Frio is more than 30 kilometers in width. We have been unable to determine the structure in that region, and not knowing the thickness of the Frio, we have little on which to base a theory. From the width of its outcrop, we assume that in part it covers a broad arch or terrace.

Huisachito Structure

Along the Gueydan-Oakville contact near the northern boundary of Nuevo Leon, is a hill made up of volcanic ash with exceptionally steep dips along the Gueydan-Oakville contact on the east, immediately east of the ranch Huisachitos. On the west side of this ridge we have plotted many low west dips. These dips were found in steep gullies cutting into the ash on the west side of the ridge. There is some question as to whether or not these are true dips as the apparent bedding in the ash may be the result of washing, and we were unable to continue the dips or close the structure toward the south. It is reasonable to assume, however, that the steep dips in the Oakville mark either a sharp terrace or an anticline.

Puerto Rosa Structure

In the vicinity of the ranch Puerto Rosa there is a dome-like structure within the re-entrant formed by the swing of ridge-forming sandstones of the middle Gueydan on the east. Exposures are so poor in that area that it is impossible to define the structure other than to know its existence. South of this place is a long high ridge composed of sandstone of the middle Gueydan, capped by gravel, slightly convex toward the west, and with a pronounced east dip slope, which reaches an elevation of more than 1000 feet above sea-level. This probably represents some

sort of a structure, probably a fault, which we have been unable to determine for lack of exposures.

In Tamaulipas, near the northeast corner of the state of Nuevo Leon, Compania de Petroleo Mercedes is drilling a well as a result of geophysical work. Exposures are such that it is impossible to determine the structure from the surface and the results of the geophysical work on which this location is made have not been made public.

TECTONICS AND GEOLOGIC HISTORY

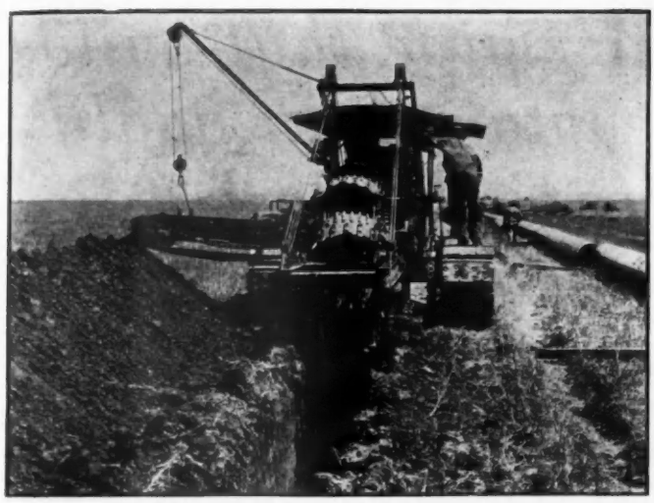
We have little information on which to base pre-Cretaceous geology or geography. There are old beds somewhat metamorphosed and similar in appearance to the Marathon series of West Texas underlying the Cretaceous in northeastern Chihuahua. There are Permian limestones in Chihuahua and Coahuila and Jurassic has been reported in the mountains south of Monterrey.[4] Marine, Triassic and Jurassic[5] has been reported in Zacatecas. Porphyry, older than Cretaceous, is reported in the San Carlos Mountains and arkose in the Ohio-Mex wells west of Del Rio. Bose[5] postulates a Jurassic continent in northeast Mexico. The continent, according to him, extends from the north, southward with a peninsula extending south, coming to a point just east of Torreon. From Torreon the shore line extends slightly north of east for almost a third of the distance across the state of Coahuila, thence northeast toward Cuatro Cienegas, thence eastward to Monclova and Lampazos. He does not delineate it farther. In wells drilled on the Tamaulipas arch in Panuco and Cacalilao Jurassic was reported underlying the Cretaceous. Nothing definite has been made public in regard to the Jurassic in these wells, but our information is that they were mostly red shales and coarse sandstones. Whatever land masses existed in Lower Cretaceous time, were probably low, as almost all of the Lower Cretaceous is limstone and little of the Upper Cretaceous, with the exception of the Eagle Pass beds and the Cardinas series, contains coarse material.

Between Cretaceous and Eocene time, the continent was uplifted and occupied approximately its present outlines. There is no evidence to believe that the great mountain ranges had as yet begun to be formed. There is almost no material derived from the Lower Cretaceous in the Eocene of Northeastern Mexico. The Tamaulipas arch, as mentioned before, has probably been a positive segment since at least early Cretaceous time, and the porphyry in the San Carlos Mountains is evidence that it was such probably during Jurassic time also. Uppermost Eocene east of the San Carlos Mountains has conglomerates derived from the Lower Cretaceous in the nearby mountains. This, together with the lack of material derived from the Lower Cretaceous in the Eocene of the north, is evidence that the Tamaulipas arch was uplifted before the Sierra Madre began to be formed. Conglomerates derived from the Lower Cretaceous occur intermittently in almost all the beds above the Eocene east of the San Carlos uplift. These mountains have therefore probably existed as such since late Eocene time. As mentioned in Stratigraphy, there may be a gravel bed in the Middle Gueydan. The occurrence of this gravel, however, is as near the San Carlos as to the Sierra Madre, and should it be an inter-formational deposit, would not necessarily prove that it was derived from the Sierra Madre. The first positive evidence we have of the uplift of the Sierra Madre is the gravels of the Reynosa. The evidence we have seems positive that the Sierra Madre was not formed until after the Eocene and may not have reached anything like their present height until Reynosa time. The Reynosa is excellent evidence that the movement forming the Sierra Madre, if not initiated shortly before that time, certainly culminated then. The source of the thick sandstones of the Eocene is uncertain. They may possiby have been derived from Uppermost Cretaceous beds similar to those in the Eagle Pass basin from the area now occupied by the Sierra Madre, or they may have been derived from the older beds much farther west. The shales of the Eocene may well have been drived from the Papagayos.

There are basaltic plugs on the north end of the San Carlos mountains. There is some volcanic activity on the south side of the Sabinas basin and some in the mountains south and west. The volcanic material in the mountains is ordinarily acidic. Practically all of Western Chihuahua is covered by thick acidic volcanic flows. The syenites of the mountains and of western Chihuahua cut through and cover rocks of the Lower Cretaceous. The basalts in the San Carlos region are intruded through beds of Upper Eocene age. North of Lampazos and east and south of Sabinas, are some mesas capped with lava which overlies gravel. The source of the great amount of volcanic material in the Gueydan is a mystery. The nearest known area of volcanic activity is that of the basaltic plugs north of the San Carlos. However, the ash content of these beds diminishes in that direction. It seems more probable that the source of these ashes is on the east and now covered by younger sediments. The front ranges offer evidence as to some sort of barrier. Whether or not they were uplifted at the same time as the Sierra Madre, we do not know. Unquestionably, they were effected by the same movement. Pre-Cretaceous geography probably has influenced the formation of the Escalera-Aldamas terrace. Exactly what this influence was, we have no means of knowing. The zone of sharp folding between the Aldamas terrace and the Front Ranges is probably due to compression and possibly some lateral movement on the north, in connection with the Sierra Madre uplift. The Sierra Madre uplift is the result of a movement from the southwest, resulting in a considerable shortening of the earth's crust. A movement of this magnitude is sure to have effected the structure on the east. However, the Tamaulipas arch seems to have been the controlling factor in the folding east of the Escalera-Aldamas terrace.

OIL POSSIBILITIES

Northeastern Mexico will probably be an important oil producing region. Development has been retarded because of the long controversy between the Mexican government and the oil companies. The political difficulties of the past seem to have been settled in such a manner that it is possible for capital to operate, and we may reasonably expect considerable activity in this region during the next few years. Mexico's new petroleum law, under which practically all the land in Northeastern Mexico is held under concession, is operating to enforce exploration. Most companies holding lands in this area are entering into a more or less active exploration period. Seven wells are now being drilled in the area and several more will probably be commenced before the end of the year. In this area the same beds are deposited which are productive in Southwest Texas, and in parts of the area the Lower Cretaceous is within drilling depth. The area is probably more favorable than Southwest Texas because the Eocene and the younger beds are more marine and there are very large and well defined structures.



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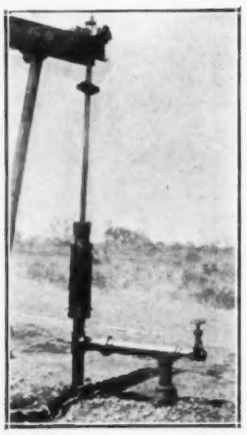
Flexible Stuffing Box

CHARLES STARYSKY

Charles Starysky, Wichita Falls, Texas, has placed on the market a flexible stuffing box with a flexible nipple inside of the housing, enabling the stuffing box to move with the sway of the polish rod caused by long strokes on jacks and beams that are out of line. The flexible nipple is made of rubber that is treated to resist oil and gas, and of several plies of canvas, and does not touch the polish rod in its movement, preventing pulling in either direction on the nipple.



Starysky Stuffing Box

The housing on this stuffing box is made of four-inch pipe and swings universally on four bolts pinned to the lower part of the device to protect the nipple from being mashed in case of the polish rod grip turned loose. The remainder of the device is made of nickel-iron threaded to receive the nipple on the well.

The design provides for lubrication on the down stroke. The follower on the rubber rings is such that oil retained in the stuffing box circulates back, lubricating the polish rod on the down stroke.

The box is loaded with graphite grease and may be reloaded while the well is pumping.

Complete information on this new flexible stuffing box is available by writing Charles Starysky, Box 224, Wichita Falls, Texas.

New Drilling and Pumping Unit

KIRK-MORROW IRON WORKS COMPANY

Kirk-Morrow Iron Works Company, Iola, Kansas, announces the development of a new combination drilling and pumping unit, now being placed on the market.

Strength and efficiency in operation are the major features strived for in this new product. All parts are easily accessible, and offer individual features of interest. The chain drive offers high efficiency in the transmission of power and at the same time is sufficiently flexible to absorb stress in shock loads. Jack posts are made extra heavy. Bearings are oversize and sprocket wheel and tug wheel are constructed along special design.

Kirk-Morrow Combination Unit

This new unit is designed and constructed for the heaviest jobs. The unit is offered in two types, Type "A" and Type "B," having six-inch and 7½-inch diameter crank shafts respectively, and may be operated with oil, gas or steam engines, or with electric power.

Kirk-Morrow Iron Works Company has prepared a complete folder on this equipment, which will be forwarded promptly to those who send their request.

Self Adjusting Expanding Plug

SCHUYLER MANUFACTURING COMPANY

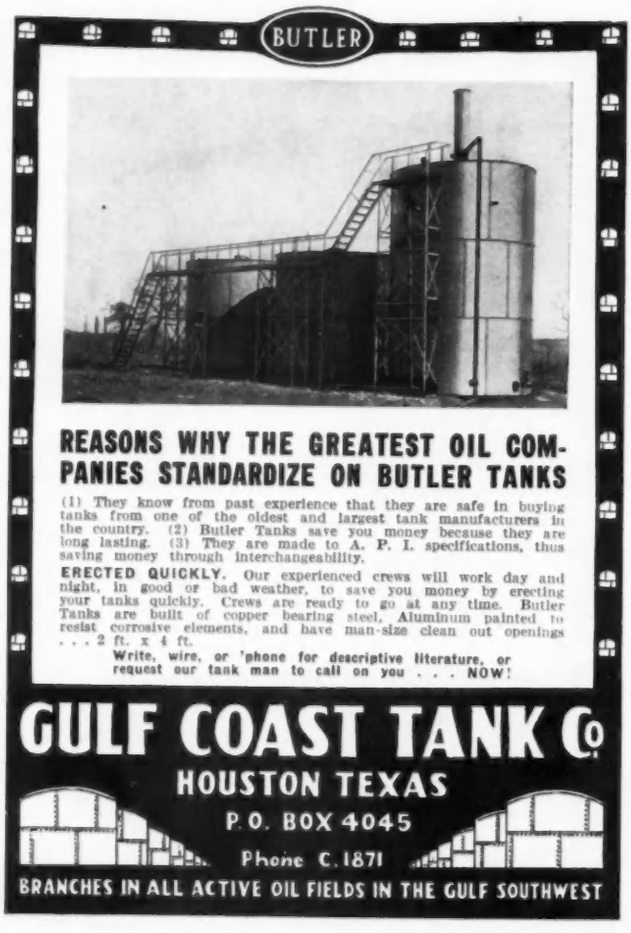
Schuyler Manufacturing Company, Duncan, Oklahoma, announces the Schuyler expanding plug, an expanding and self adjusting cement plug for plugging salt water, sand, or for plugging back.

A pipe is cut the desired length of the plug and threaded on each end to receive flanges. Each flange is welded to the pipe to prevent leaks around the thread. Between the first two flanges a series of back pressure valves are placed to allow cement to enter rubber tube. This heavy rubber tube, specially manufactured (similar in weight to heavy truck tube), is slipped over the pipe and pulled up over flanges at each end. Layers of heavy duck fabric, sufficient to hold the desired pressure, are placed on flanges at each end and run alternately well past the center of the plug. In this building up, one layer of fabric is telescoped over the other. A second

Schuyler Plug

flange is then placed on each end and followed by a lock nut which holds the rubber and fabric between the flanges. The edges of these upper and lower flanges are punctured with holes through which wires run from each end for the purpose of protecting the fabric from injury while running into the hole. A light tie or wrap between the shoulders holds fabric and wire in place. This temporary tie or wrap breaks away under pressure, permitting the plug to expand. A back pressure valve and a right and left nipple complete the plug. A back pressure valve is also placed on the bottom, so that after expanding the plug it is possible to pump cement completely through and fill any cavity that may be below the point at which the plug is set. When this has been done an increased pressure will show on the gauge at the top of the tubing and when the desired pressure has been obtained the tubing is rotated off of the plug and the cement remaining in the tubing is dumped above the plug, leaving a solid cement bond above and below the Schuyler plug, which has been expanded with cement. Excess moisture is forced out under pressure, permitting cement to set in the shortest possible time.

The plug is built any desired length and diameter, can be set on the bottom of the hole or suspended at any point between top and bottom. The plug is so constructed as to prevent agitation by moving water which in many cases either prevents the cement from setting or causes it to be porous. The rubber tube is designed to prevent any chemical reaction between cement and water. The manufacturers are prepared to furnish the entire service except the handling of tubing and drill stems.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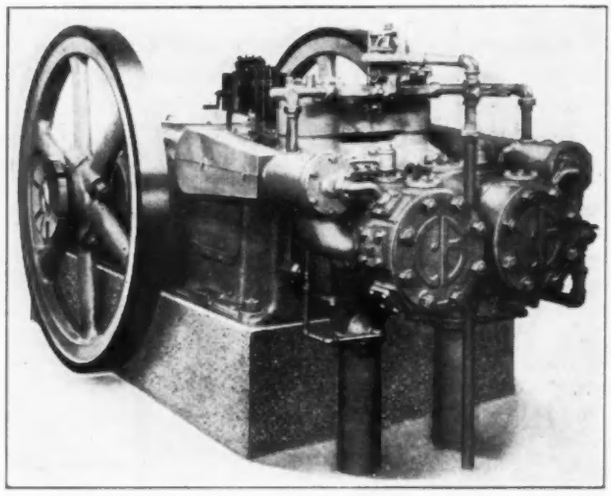
Cooper-Bessemer Corporation, Mt. Vernon, Ohio, is introducing the Type GAU, 75 horsepower at 225 r.p.m. twin-cylinder gas engine, the chief application of which is deep well pumping, swabbing, pulling and cleaning out. Though specially designed, the engine has parts and follows principles common to other two-cycle types in the line.



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The manufacturers will forward, upon request, a detailed description of this new deep-well gas engine.

Natural Gas Equipment, Inc., has announced the appointment of James C. McCluskey as sales manager, southern division, with headquarters at Los Angeles. McCluskey has been associated with Natural Gas Equipment, Inc., for the past eight years in the California and Mid-Continent fields. In his new capacity he will have charge of sales in Southern California, including the Kettleman Hills area.

Brown Well Control Company, who several months ago introduced the "Humdinger" six-way bit into East Texas, announces the appointment of Bill Dinger, formerly with International Supply Company at Oklahoma City, as an addition to its East Texas sales force.

Fluid Packed Pump (Mid-Continent) announces the transfer of V. A. Williams from the Texas Panhandle territory to East Texas as an addition to the sales force there. He is making his headquarters at the company's Kilgore store, and working with Bill Harr, new East Texas district manager for the company, having been transferred from West Texas last month.

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Manufacturer and Supply Dealer Notes

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1931 Edition Composite Catalog of Oilfield and Pipe Line Equipment

The 1931 Edition of the Composite Catalog of Oilfield and Pipe Line Equipment, published by The Gulf Publishing Company, is now in process of being printed and will be ready for distribution in August. It will be several hundred pages in size. This Composite Catalog will, as its name indicates, be a co-operative catalog participated in by a large number of manufacturers. It will be standard catalog size, will contain no display advertising, but will contain descriptive matter on hundreds of pieces of oil country equipment, specifications, etc. It will also show the addresses of the various sales offices of the companies describing their equipment.

A feature of this Composite Catalog will be the complete American Petroleum Institute Standardization Specifications, edited for the Composite Catalog by the American Petroleum Institute. These specifications will include those changes made at the June meeting of the Production Division of the A. P. I. at Dallas. This section will be indexed.

The descriptive matter, will be indexed by manufacturing companies and cross indexed by types of equipment. For instance, the oil man desiring information on a certain type of equipment will turn to the "Classified Index," where he will find the product listed with the page numbers of the various manufacturers describing the equipment.

Many pieces of equipment which have never been described in catalog form will be found in the 1931 Edition of the Composite Catalog.

One manufacturing company, Reed Roller Bit Company, will include its entire catalog in the Composite Catalog.

Copies of this Composite Catalog will be sent free of charge by The Gulf Publishing Company to independent operators, drilling and pipe line contractors, executives in charge of production or pipe line work, superintendents, engineers, purchasing agents and foremen, on request.

On Page 31 will be found a coupon which may be used in sending in your request.

Hill, Hubbell and Company Division of General Paint Corporation, announces appointment of K. H. Burton to specialize in sales work on the company's Biturine products and mill wrapped pipe. Burton is a veteran in pipe line work, having formerly served Oklahoma Natural Gas Corporation and Public Service Company of Oklahoma, interested principally in the protection of pipe lines against corrosion. He has also served Wailes-Dove-Hermiston Corporation and The Resistcor Engineering Corporation in the past. The Hill, Hubbell and Company Division of General Paint Corporation has equipment set up in seven of the country's largest steel mills, where they are prepared to mechanically coat and wrap pipe for protection against corrosion.

Maloney Sales Corporation, handling Maloney tanks and Muskegon separators, have just opened at Willow Springs, Texas, a branch office and yard with stocks of both Maloney tanks and Muskegon separators. The branch will be in direct charge of Joe Coulter, who has been transferred there from the Texas Panhandle division. Maloney Sales Corporation has headquarters at Tulsa and is headed by W. H. Elliott. R. D. Gwynne, who has been secretary and treasurer of the company for the past five years, will now become active in the company in charge of sales, and is leaving for a few weeks in the East Texas field.

Page Steel & Wire Company, Bridgeport, Connecticut, announces a new booklet devoted to Page fence, published by Page Fence Association. The booklet contains various style sheets of chain link and wrought iron picket fences, and includes logical reasons why well-fenced property is safe and enonomical. This booklet is titled "The Border Patrol." Another booklet, "Why Aluminum Fence," has been published by Page Steel & Wire Company, and outlines the development in the fence industry recently of aluminum for the manufacture of woven wire fences. A copy of either or both of these booklets will be mailed interested persons upon request to Page Steel & Wire Company, Bridgeport, Connecticut.

Gardner-Denver Company, Quincy, Illinois, has issued a new 32-page bulletin, PC4, illustrating and describing the various sizes and mountings of its portable compressor line. Engineering features include force feed lubrication with filtered oil, generous bearing areas, and the simplicity of the automatic control system. Bulletins may be secured direct from the company's offices.

B M W PRODUCTS for pumping wells
The KEY to LOWER LIFTING COSTS
CORRECTLY DESIGNED . . ECONOMICALLY PRODUCED
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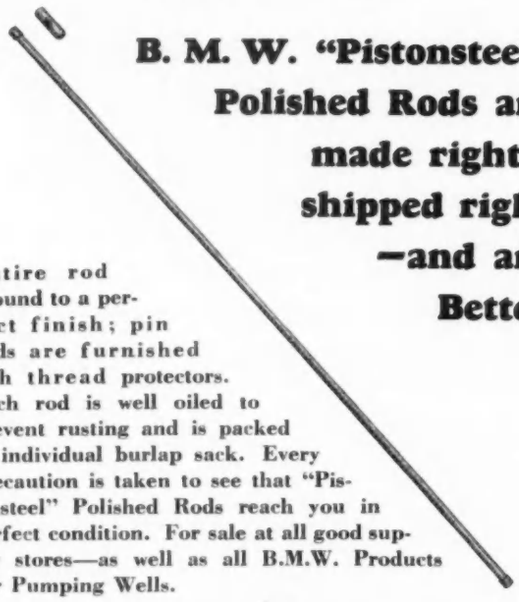

B. M. W. "Pistonsteel" Polished Rods are made right—shipped right—and are Better

Entire rod ground to a perfect finish; pin ends are furnished with thread protectors. Each rod is well oiled to prevent rusting and is packed in individual burlap sack. Every precaution is taken to see that "Pistonsteel" Polished Rods reach you in perfect condition. For sale at all good supply stores—as well as all B.M.W. Products for Pumping Wells.

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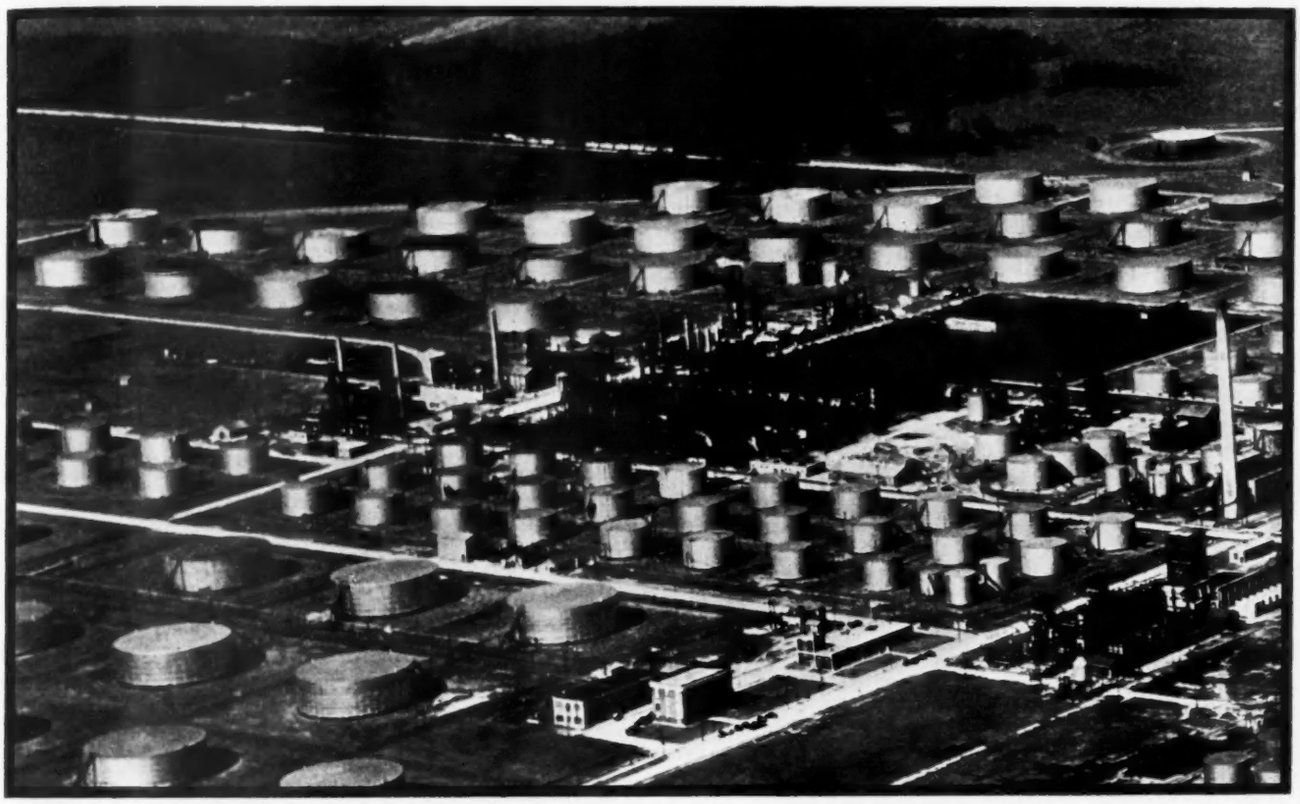

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In the important job of retarding corrosion . . . in the equally important job of keeping down maintenance-costs, Byers Genuine Wrought-Iron Plates are a solution which challenge engineering consideration! For with a long tradition of satisfactory service, wrought-iron plates are once again available, made of better wrought-iron than ever —the long-desired material for the construction of oil storage tanks. The physical and chemical control that modern manufacturing permits makes Byers Genuine Wrought-Iron the best wrought-iron ever produced. Long experience in the solution of corrosion-problems equips our engineers to give you much valuable counsel, and a request from you will place the facilities of our organization at your disposal. A. M. Byers Company, Pittsburgh, Pa. Established 1864.

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BYERS GENUINE WROUGHT-IRON PRODUCTS

AN INVESTMENT—NOT AN OUTLAY

Squeaks From the Bull Wheel

"Don't you know that the stuff you're drinking is slow poison?" warned the wife.

"That's all right," replied the bibulous husband. "I'm in no hurry."

Constable (to speeding foreigner)—'Ere, you mustn't go rushing abaht like that. What's yer name?

Speeding Foreigner — Je ne comprends pas.

Constable—'Ow d'yer spell it?

Farmer—If I were as lazy as you, I'd go and hang myself in the barn.

Hobo—No, you wouldn't. If you were as lazy as me, you wouldn't have any barn.

Skikshinny—They tell me you were arrested for disorderly conduct the other night.

Obfuscain—Yes, I tried being a pal to my boy.

Editor—The article is not bad, but you must write so that any fool can understand you.

Author—Which part is not clear to you?

"Kind lady, can you help a poor man that's been to the front?"

"No, I've nothing to give away, and I don't believe you've ever been to the front."

"I have, lady, but couldn't make you hear."

Lady Caller—Is the manager in?

Office Boy—No, he just went out to lunch with his wife.

Lady Caller—I see. When he gets back with the stenographer tell him his wife called.

Huh! Another tramp! And I suppose you're going to tell me that you have a wife and four kids at home starving to death?

No, lady. I got four wives and their Pekingeses at home waitin' fer their alimony!

Doc. (to patient's wife)—By all means get him to perspire. The more the better.

Wifey—Oh, I see. I think I'll put this year's tax bills on the bed before him. They should make him sweat.

Warden—Say, what's the big idea? Why are you bringing the prisoner out to the gallows today? I know we have to hang him tomorrow but why rub it in?

Keeper—Well, you know, we've never had a hanging before and I knew you would want everything to run smoothly. So I thought it would be wise to have a little rehearsal just to show the prisoner the ropes.

Kunkle—A good many ladies were disappointed this afternoon.

Bilhardt—How was that?

Kunkle—The guest who was spoken of as a bridge expert turned out to be nothing but a famous engineer.

Miss Ouri—Well, one thing Amos and Andy have done is to make people realize the importance of brushing their teeth regularly.

Mrs. Ippi—Yes, take my little Bill and Jack, for instance. It's a fight between them twice a day to see which shall have the toothbrush first.

A popular Wichita oil producer, who has a new baby in the hospital, was receiving congratulations of friends, says the Wichita Beacon. "Luck to you but I'm not rich enough myself," commented one oil man.

"Neither am I," replied the father, "it cost me 1000 barrels of oil."

Added: That must have been high gravity oil or the Wichita doctors and hospitals have come to realize the plight of the poor oil man.

"We consider tipping a degrading custom, and have formed a society to put a stop to it."

"Ay, I'll join it," said the man from Aberdeen, gladly.

"Good; the membership fee is only 50 cents a year."

"Mon, that's different. I'm thinkin' it'll be cheaper for me to tip."

"Mandy, how come you all's feet grow so big?" inquired Rastus, the first evening he had called on the "village queen."

"Well, I used to live down Souf, where de soil am rich; an' goin' barefooted so much just natcherly made 'em grow big."

"Suttahnly," remarked Rastus, with a broad grin.

"Look-a-heah, nigger, what you all laffin' about?" asked Mandy.

"I—I—wuz jest thinkin' you all must a done a heap o' settin' down too."

Angler—What do you think of these beauties?

Wife—You needn't try to deceive me. Mrs. Smith saw you in the fish store.

Angler—I know she did. I caught so many I simply had to sell some.

THE BITE OF A BIT...

can be

handled only according to its dissolution.

With a wall, or ball, between the "bite" and the passing fluid, only a minimum amount of cuttings can be dissolved and washed up regardless of pump pressure or volume of fluid.

Write for complete information

The water courses in APPLEMAN BITS lead directly to the cutting edge. This not only provides a greater cooling effect but prevents balling up . . . or a wall forming between cutting edge and fluid exit.

Use APPLEMAN GUMBO BITS from now on and save time and money.

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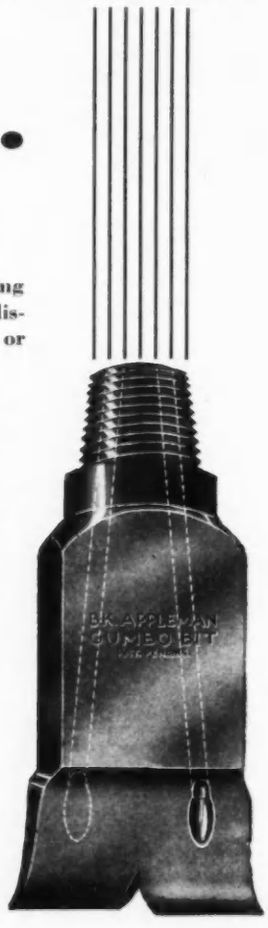
BEAUMONT, TEXAS



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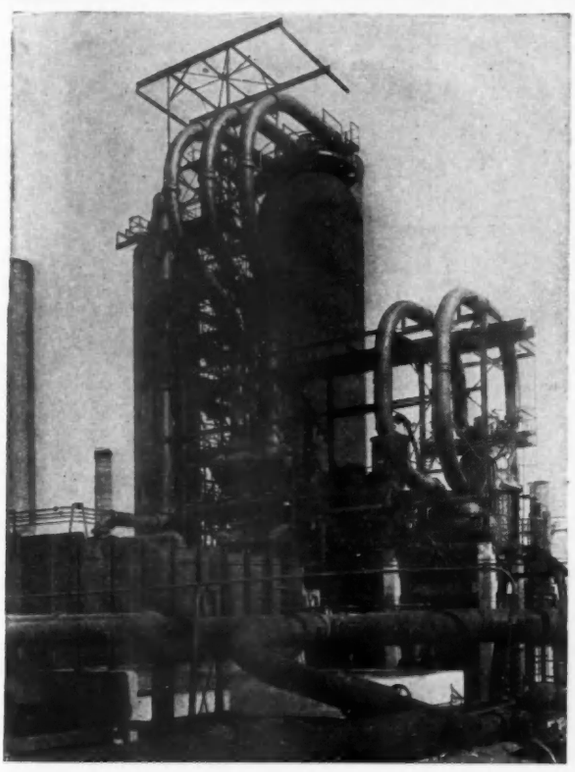

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When the Gulf Coast set a New Record

"VULCANS" WERE THERE

Up and down the oil fields you'll find "Vulcans" doing the *tough* jobs along with the usual day's work. For instance, when the Union Sulphur Company's Fee No. 762 was drilled to a record depth of 9250 feet, "Vulcans" were very conspicuously on the job.

It is the unfailing dependability of these famous tongs that makes them the leader. There are more "Vulcans" in service in the oil country than all other makes combined.

Available in nine sizes for pipe 1/8 to 18 inches.

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GENUINE
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SUPERIOR DROP-FORGED TOOLS
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CHAIN PIPE TONGS

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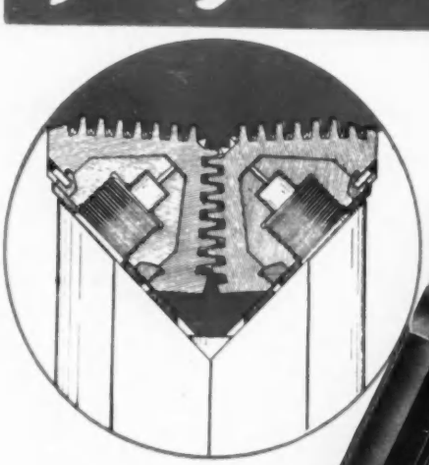
Hughes ROCK BIT CONES



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The ONLY ROCK BIT CONES that are SELF-CLEANING

Hughes "Self-Cleaning" Cones are especially designed for cutting medium hard and medium hard sticky formations.

The teeth of these cones are so spaced that they intermesh and clean each other while rotating.

Hughes 'Self-Cleaning" Cones are used on the Regular Hughes Simplex Rock Bit Head. Operators, contractors and drillers throughout the Rotary Fields of the world have found that these cones assure maximum speed, safety and economy in drilling.

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